

George E. Carothers



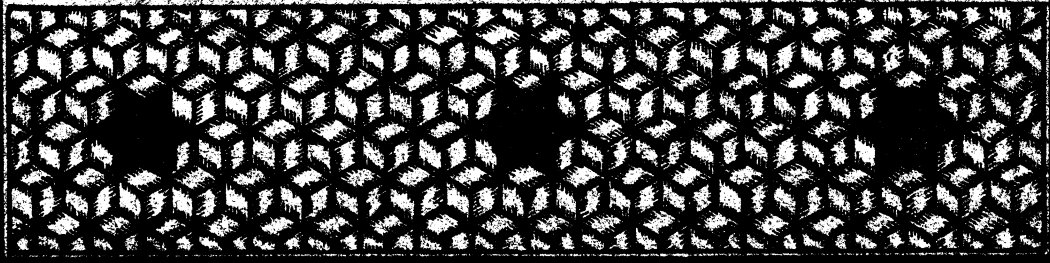
THE PHILIPPINE CRAFTSMAN

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CONTENTS

	Page
Course in Hand Weaving of Pliable Fibers. By Carrie E. Anderson	211
Vocational Guidance—Opportunities or Clerical Employees. By Dr. B. L. Falconer and R. H. Wardall	253
Nurseries. By George Whiting	257
Editorial	269
Industrial Notes	274

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Up to the point of efficiency, when one is learning a trade or profession, there is comparatively little joyousness in his labor; but with the consciousness of mastery, of thorough knowledge and aptness, comes a feeling of strength, of self-satisfaction, of superiority, which takes away all sense of drudgery, and makes the pursuit of one's occupation a source of constant delight.

—William Matthews.

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COURSE IN HAND WEAVING OF PLIABLE FIBERS.

By CARRIE E. ANDERSON, *Industrial Inspector.*

IN every part of the Philippines are found many pliable fiber materials that may be used for weaving of one kind or another. Some are well known and quite common, and have been for a long time in general use as industrial materials. Others are but locally developed for a few definite articles. A larger variety of articles can be made from buri than from any of the other materials, and in many respects it is the most desirable fiber for beginners to work with. It is not too flaccid, too stiff, or too brittle. It is easy to strip and can be uniformly trimmed down to almost any desired width.

Since it is often necessary for beginners to undo their work repeatedly while practicing new weaves, the wear and tear of the materials are considerable. Buri does not show this wear as readily as other materials, and can often be used over again, whereas the others must be thrown away. To the beginner, it is very important that the strips should be uniform in width, not too long nor too fine. To insure uniformity in the width of the buri strips a stripping machine, provided with very sharp knives, should be utilized. This machine will answer a threefold purpose. It will strip the materials uniformly, give them a smooth edge, and save time. This last item is quite an important one, for without a stripping gauge the teacher would be compelled to spend the entire industrial period in stripping sufficient buri for the members of the class—allowing no opportunity to oversee, direct, or teach the work.

The following weaves are given in a systematic order, beginning with the simplest ones and leading up to the most difficult. As certain articles in the simpler weaves may be more difficult to make than those in a more complex weave, the making of these articles is deferred to a later period.

The fiber materials in the beginning of the course should be 1 centimeter wide, and the measurement should be exact. This

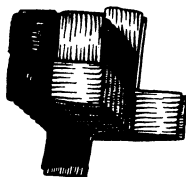


Plate I. Chain weave.

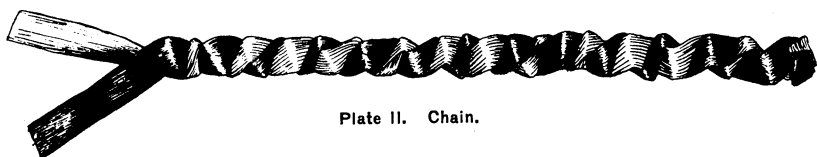


Plate II. Chain.

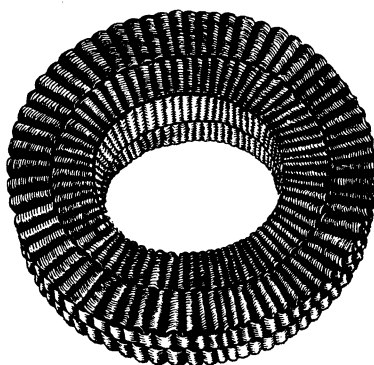


Plate III. Wheel.

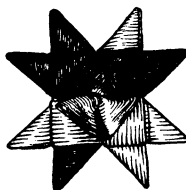


Plate IV. Star.

serves a twofold purpose. The child's eyes and fingers become accustomed to a certain standard measurement which will serve him well in his later development. Since the muscles of the little child are yet undeveloped and not fully under control, large materials will give him more power, whereas fine materials will have a tendency to cramp the fingers and arm muscles and retard their proper growth. Even if pupils are able to handle very fine materials and turn out seemingly fair work, it is no indication that this is for their good. The work could in all likelihood be better performed if sufficient preliminary practice were given to lead up to the more complicated work. Although little boys and girls can carry heavy loads and perform labor that belongs to an adult, such labor stunts their growth, and the results are not desirable.

The course in elementary hand weaving here outlined consists of steps for beginning the hand weaving of pliable fibers found abundantly in the Philippines. The educational value of training the hand of the child in giving him ideas of size, proportion, and color is the first consideration in the preparation of this course, though the practical utility of the articles made is not to be lost sight of. Specific instruction for the sizes of materials and the dimensions of finished articles are also given. All the articles mentioned have been fabricated by pupils in the primary grades and have been found to be such as can be easily made. At the same time, they are such as children will be pleased to use in their homes—so many of which are entirely devoid of any form of ornamentation. The various steps have in mind the making of more difficult objects in the higher grades, such as mats, hats, and other fiber products. A course in the weaving of non-pliable fibers will be given in a later issue of *THE PHILIPPINE CRAFTSMAN*.

The present article confines itself to the hand weaving of pliable fiber materials. The chief materials used in such work as this are:

Straws: Cobboot, rice, balangot, tikug, tayoc-tayoc, tiker, alinang.
Strips: Buri, coconut, karagumoy, nipa, pandan, sabutan, bamboo, Calasiao, rattan.

Splints: Bamboo, nito, rattan.

Fibers: Buntal, coir, cabonegro.

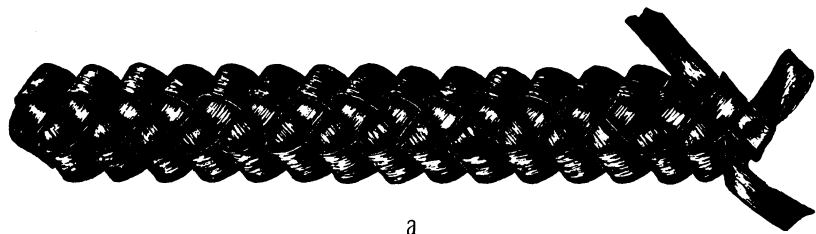
Raffia: Buri, pandan.

Lupis: Abaca, banana.

Basts: Anilao, anabo, malabago, marbas, lusuban, tongtonking, tanag.

Stems: Nito, pamago.

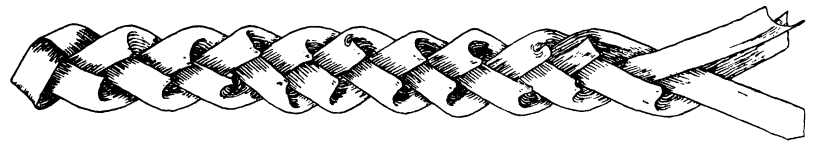
Roots: Amlong.



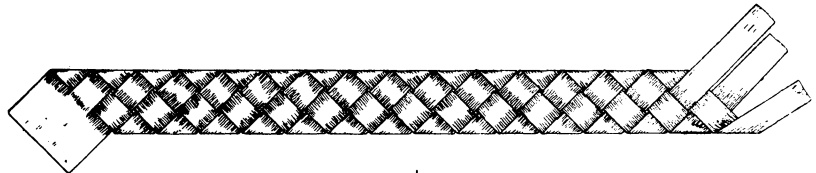
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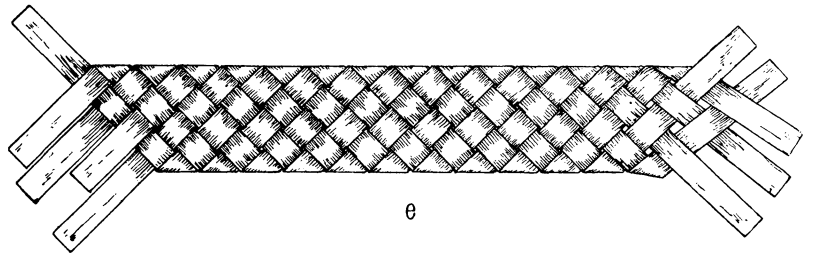
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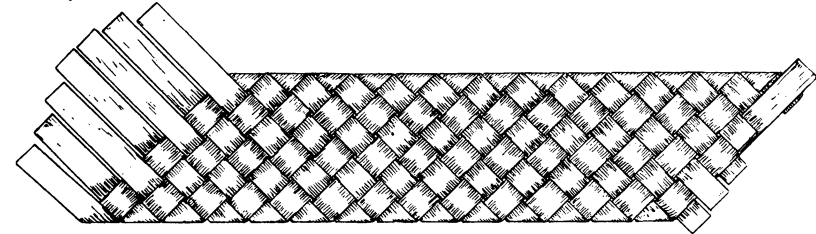
c



d



e



f

Plate V. Braids.



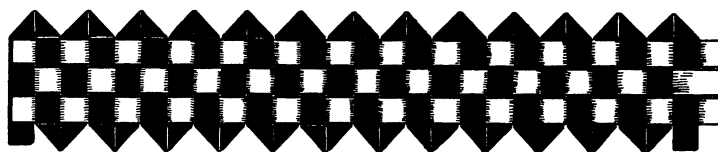
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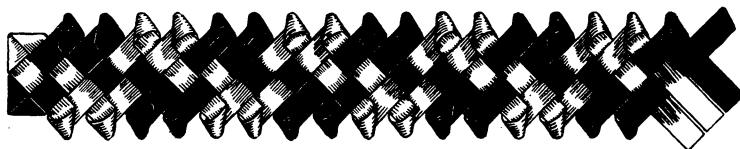
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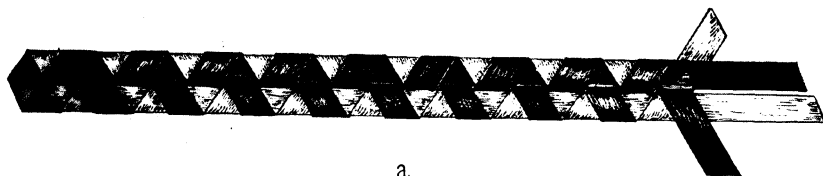


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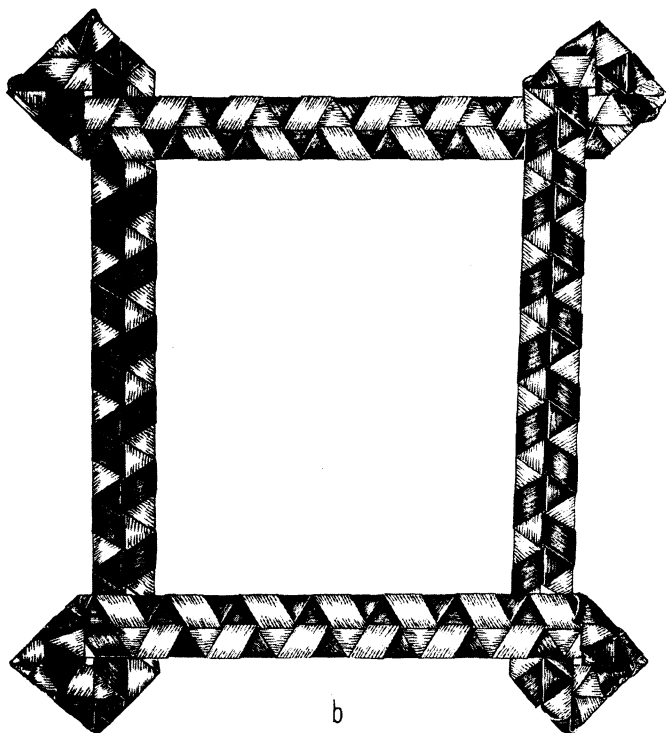


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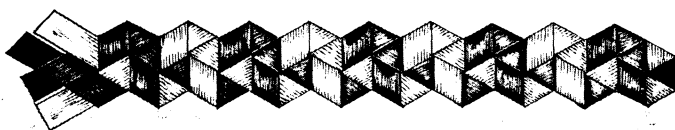
Plate VI. Braids of even numbers.



a.

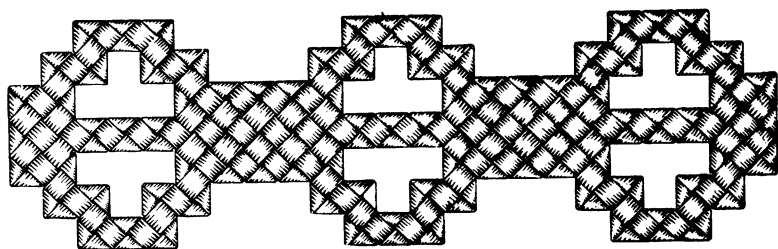


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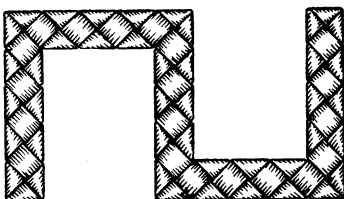


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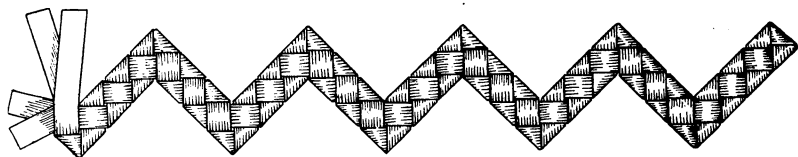
Plate VII. Four-strand braid.



a



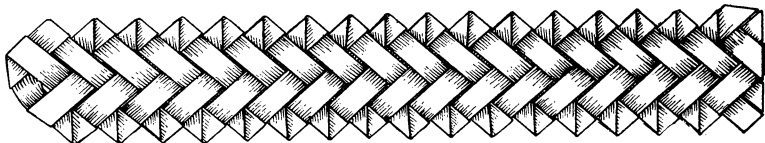
b



c



d



e

Plate VIII. Braids.

The following classifications of the various weaves used in the manufacture of articles from pliable fibers will be followed:

VARIOUS WEAVES.

- I. Chain weave. (Plates I, II, III, IV.)
- II. Braids. (Plates V, VI, VII, VIII.)
- III. Simple over and under weave.
 - (a) With strips running perpendicularly from edges. (Plate IX.)
 - (b) With corners having a double turn at right angles and strips running diagonally. (Plate XIX.)
 - (c) With cushion corners. (Plate XXVI.)
 - (d) With bayon corners. (Plate XXXIII.)
- IV. Double weave. (Plate XXXIX.)
- V. Sawali weave. (Plate XLIX.)
- VI. Openwork weave. (Back cover design.)
- VII. Knot weave. (Plate LII.)
- VIII. Coiled weave. (Plate LVII.)
- IX. Hat weave.
 - (a) Star center. (THE PHILIPPINE CRAFTSMAN, Vol. I, No. 3, p. 187.)
 - (b) Square center.
 - (c) Whirl center.
- X. Hexagonal weave. (THE PHILIPPINE CRAFTSMAN, Vol. I, No. 3, p. 191.)

I. CHAIN WEAVE.

The first chain weave is a simple folding of one strip over another at right angles.

Take two strips of contrasting colors, each about 40 centimeters long and 1 centimeter wide. This will make nearly 20 centimeters of chain. Lay one strip over the other exactly at right angles, one centimeter from the end of each strip, and fold the short ends upward and over. Then fold the long end of the under strip on top of the upper. Continue this fold until the strips are used up.

In the more complicated chain weave (Plate I), take four strips 60 centimeters long and 1 centimeter wide, using two colors. Weave the center of two strips across the center of the other two strips, and weave until the four ends are used up. Add new strips whenever necessary, being careful to insert far enough to insure firmness.

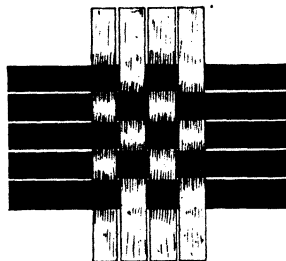


Plate IX. Strips running perpendicularly.

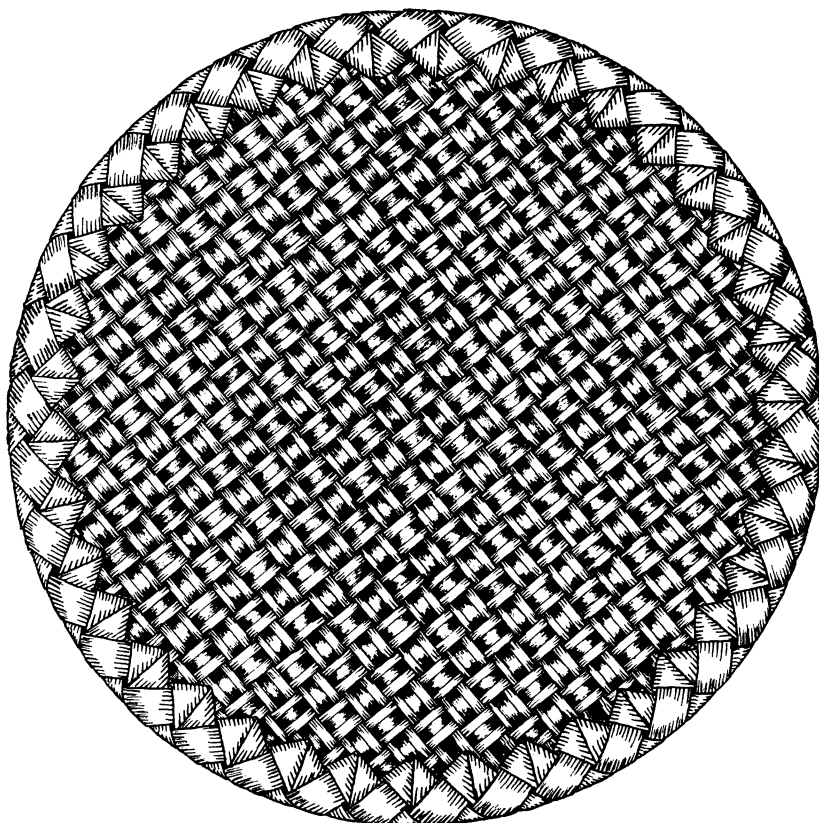


Plate X. Circular lamp mat.

Caution.—The fold must be exactly at right angles. The strips must be of uniform width. In splicing, the end of the new strip should overlap the short old strip at least 4 centimeters to hold firmly.

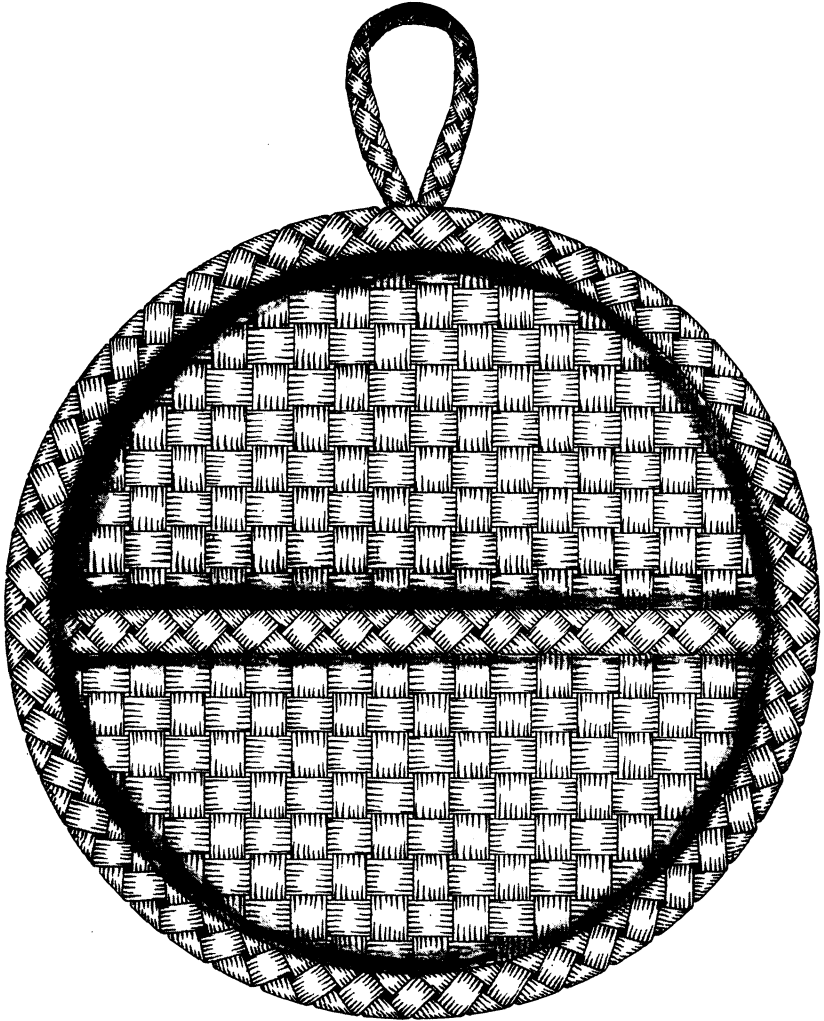


Plate XI. Wall pocket.

The chain shown in Plate II may be made as long as desired and the ends cut off 1 centimeter from the close of the weave and then tucked in securely.

These chains could be used for playthings for various purposes. Every article that the child makes must have a meaning for him.

A simple little chain or braid may be a toy snake, a hatband, a necklace, a pair of earrings, or an ornament to hang from a lamp shade or picture frame. It may be used for decorating the schoolroom, where each pupil may contribute his little mite for

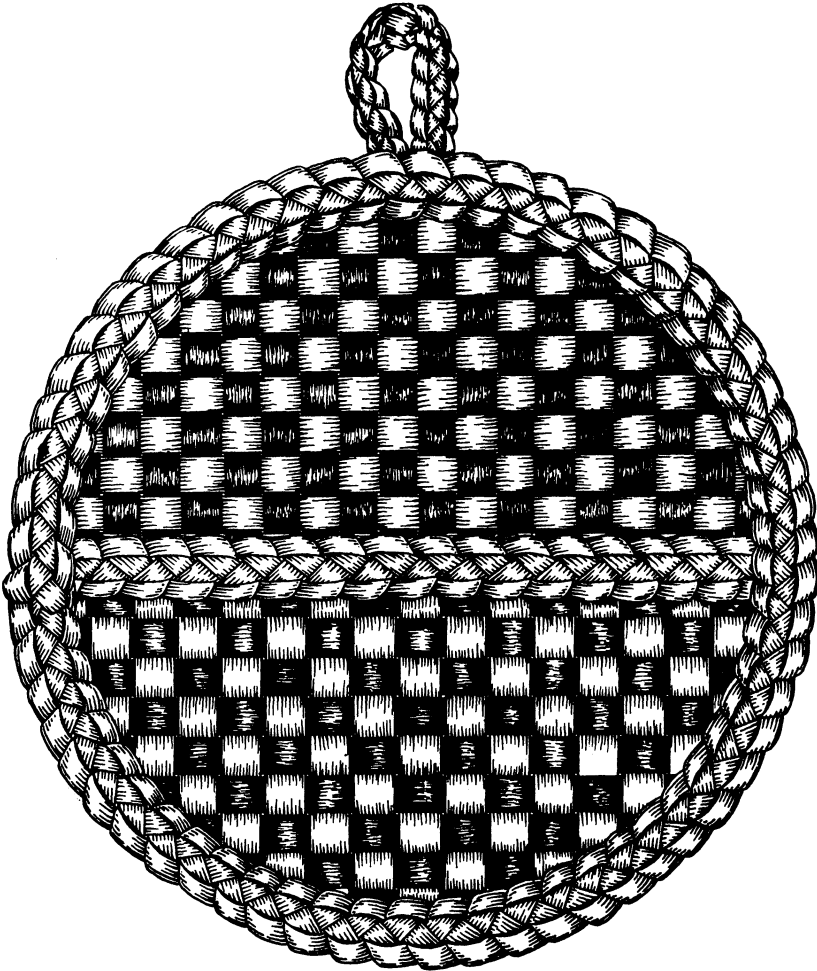


Plate XII. Wall pocket.

the benefit of all his fellow workers. If for such purposes only the best work is chosen, the child will be encouraged to do more careful and painstaking work through the spirit of emulation and in the desire to make his schoolroom attractive. This will be one of the first lessons he receives toward fostering a love of

artistic surroundings, and will find further expression later in his interest in the improvement of his chosen community.

A number of chains may be made of the same length—some of one color, some of another—and arranged on a stick in symmetrical order, as three white, three red, etc. A ladder may be made by making chains 6 centimeters long, with two sticks

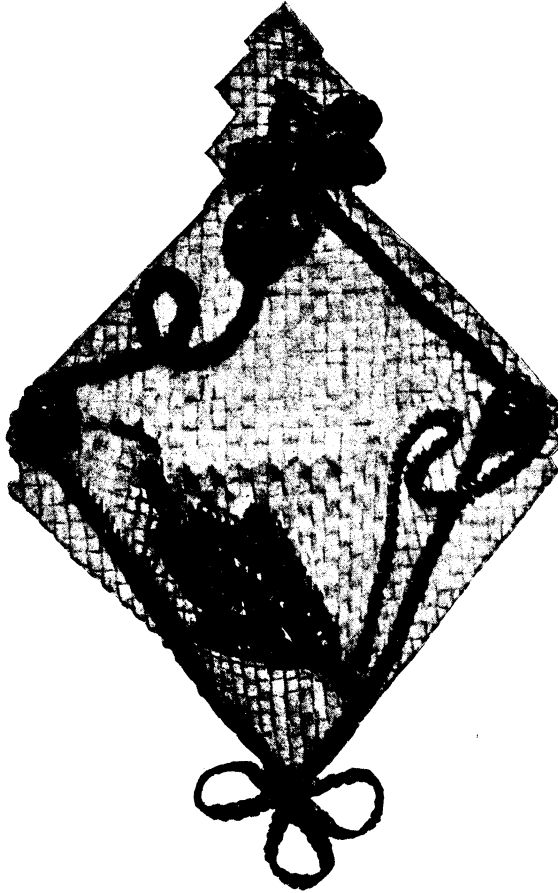


Plate XIII. Small wall pocket.

tucked through the ends, leaving spaces between. These chains may also be of two colors, arranged symmetrically.

Wheel (Plate III).—The chain made of four strips may be woven until long enough to combine the ends, forming the chain into a wheel. The diameter should be at least 10 or 12 centimeters. It may be used as a base for cut-out paper dolls,

for trees made of bamboo sticks, or for other little toys. The wheel may also serve as a picture frame, if a loop is attached to the top, and a piece of cardboard pasted on the back.

From 8 to 20 small bamboo sticks may be placed vertically in the creases, at even distances from each other, and some narrow strips of buri or grasses intertwined in the sides. Many interesting lessons in weaving may be learned by using an even or odd number of sticks, by using two strands of different colors, and by intertwining three strands of two colors.

Star (Plate IV).—Take four strips 16 centimeters long and 1 centimeter wide. Proceed as for the wheel until two of each of the four pairs lie adjacent. Fold one strip at right angles close



Plate XIV. Eye shade.

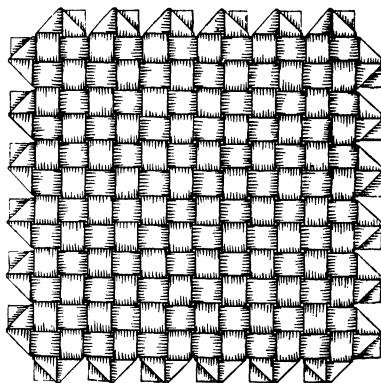


Plate XV. Square table mat.

to the square. Fold again at right angles. Turn one triangle over the other and insert the end into the body of the weaving. Treat the remaining seven strips in the same manner. Give the ends a half turn and insert. These stars may be used for ornaments. They may be attached to necklaces.

II. BRAIDS.

The various braids are exercises which little children will love to make, if the braids are put to different uses such as necklaces, hatbands, and pincushions.

The two-loop braid (Plate V, *a*) is made of one strip, and may be of any color desired. It may be put on a hat as a hatband, and in later work may be used to decorate articles.

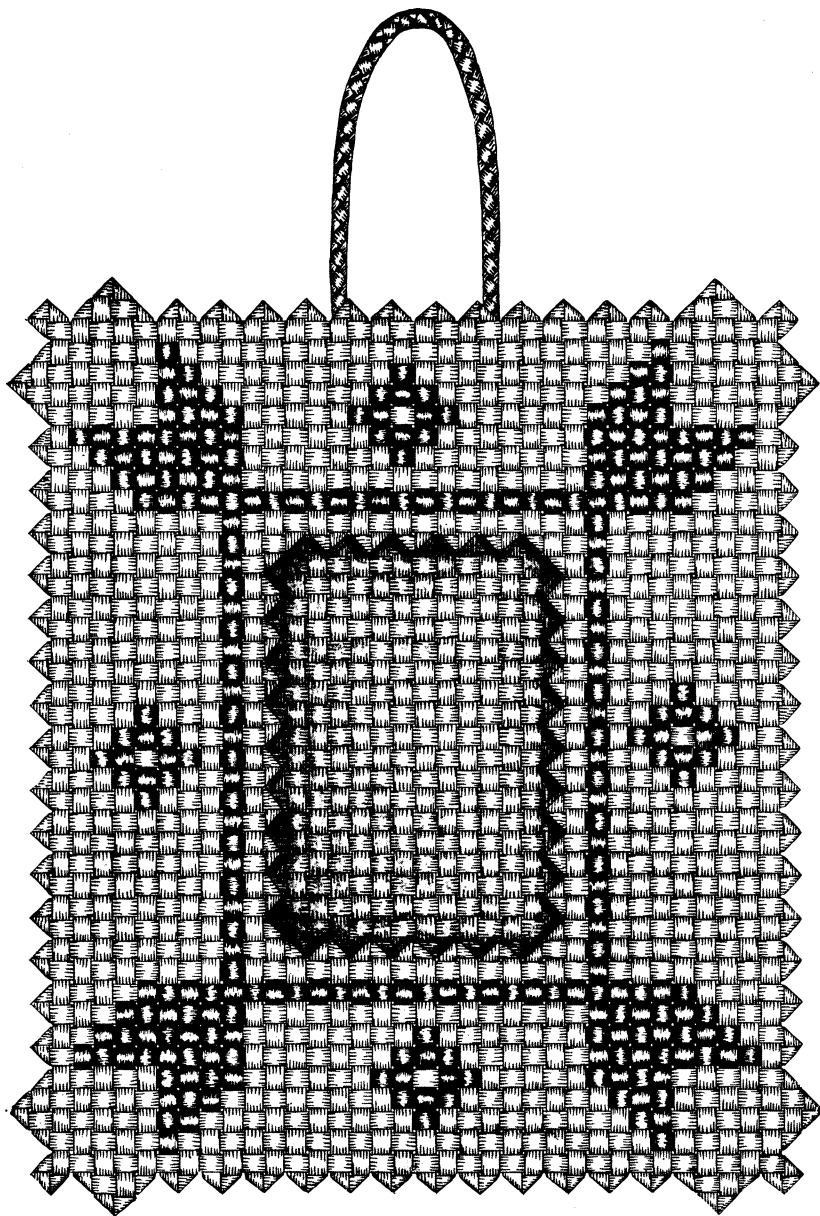


Plate XVI. Picture frame.

The two-strand braid (Plate V, *b*) may be made of two colors, and may be used for the same purposes as the two-loop braid.

The three-strand braid (Plate V, *c* and *d*), five-strand braid (Plate V, *e*), and seven-strand braid (Plate V, *f*) will give the

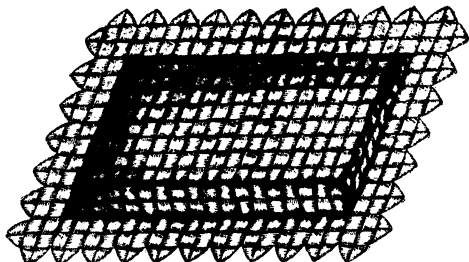


Plate XVII. Tray.

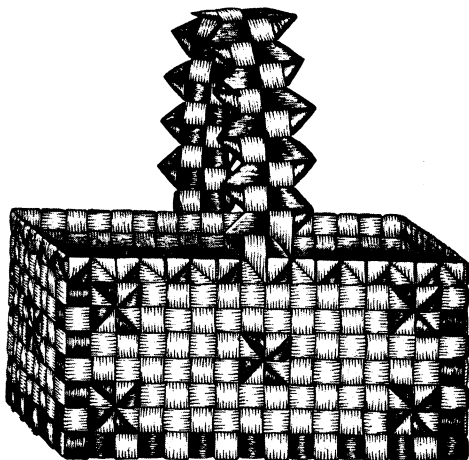


Plate XVIII. Oblong basket.

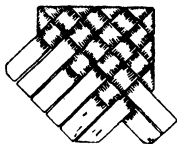


Plate XIX. Corners having a double turn.

pupils exercise in turning corners at right angles, all of which are turned overhand when an odd number of strands is used. For the first trial with the three-strand braid the strips may

be attached in order to give the beginner greater ease in manipulating the weave.

The three-strand braid may be woven and the ends inserted into each other so as to make a small bracelet. The five-strand braid may be made into a tight roll about 4 centimeters in diameter and then securely tied. It will then serve as a pin-cushion.



Plate XX. Calendar back.

The five-strand braid and the seven-strand braid may serve as play belts.

Weaving strands of even numbers, such as two strands (Plate VI, *a*) and four strands (Plate VI, *b*), necessitates the use of an underhand turn in addition to the overhand turn, and will be quite difficult for beginners until they have had sufficient practice. These may all be overhand turns if the article is reversed

each time, but this should be discouraged; the pupils should learn to be skillful in both overhand and underhand turns.

These braids may be used as hatbands or chains such as the children desire in play. Later they may be used for decorating articles.

The next braid (Plate VI, *c*) introduces a double turn at right angles which is very common in most of the weaving, but which needs much practice in order to obtain perfection. In fact many of the more difficult articles made by expert weavers show a lack of perfection in this particular point. The teacher must guard the pupils carefully in making the corners at right angles and in keeping the strips vertical.

The four-strand braid (Plate VI, *d*) may be made into belts, and the two-strand into wristbands, as also the four-strand braid with looped edges (Plate VI, *e*).

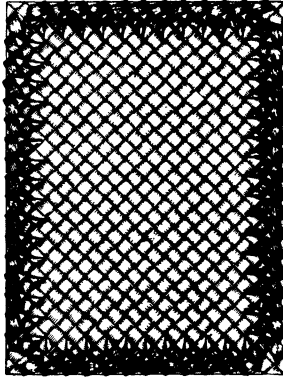


Plate XXI. Petate for doll.

The four-strand braid (Plate VII, *a*) with oblique turns is simple and easy. It makes a fascinating weave for the child when two colors are used. A long woven braid may be shaped into a picture frame (Plate VII, *b*), into a square, a triangle, or other figure. Two of them may be folded like the chain described in the chain weave made of two strips.

The hat braid (Plate VII, *c*) is a common well-known braid, and may be sewed into a hat.

Braids (Plate VIII).—(*a*) This braid is of the open-border style, and may be made in any width desired according to the width of strips used. If well made, it might be even a commercial article to be used as a hat braid for women's hats.

(b and c) Braid made of double strips, with cushion corner turn.

These may be made in various figures such as found in Craig's book, forming borders, etc.

(d) This is a three-strand braid made with narrow strips, the same as Plate V, b.

(e) A six-strand braid.

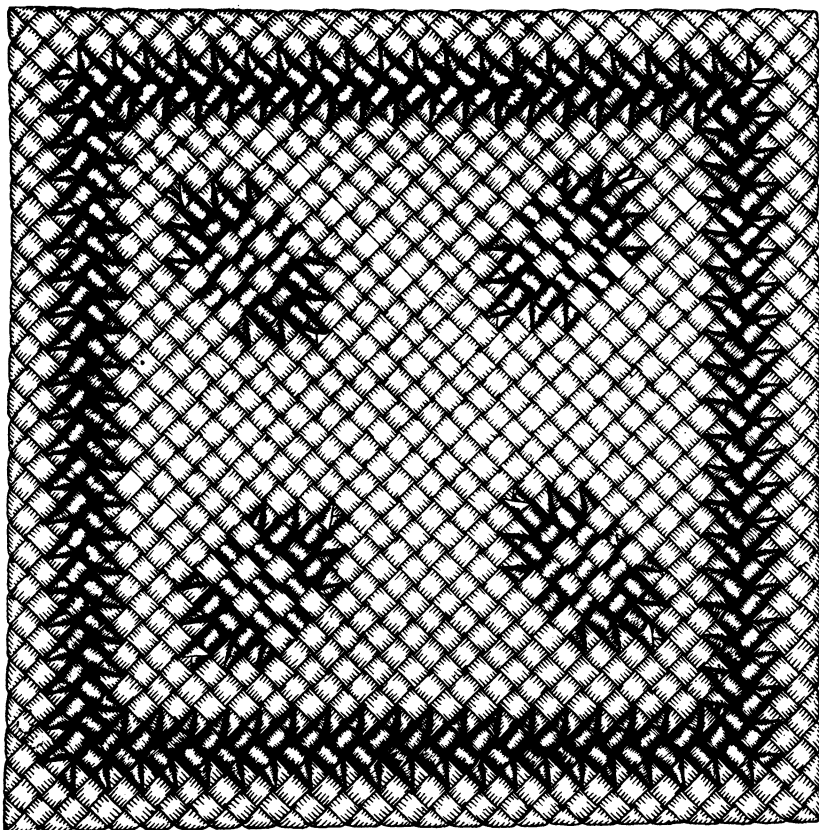


Plate XXII. Lamp mat.

III. SIMPLE OVER AND UNDER WEAVE.

(a) WITH STRIPS RUNNING PERPENDICULARLY FROM THE EDGES.

This is a simple over and under weave, beginning at the center of the strips (Plate IX).

Caution.—Have all the turns at right angles. Draw the strips together and avoid large openings. Have no threads visible

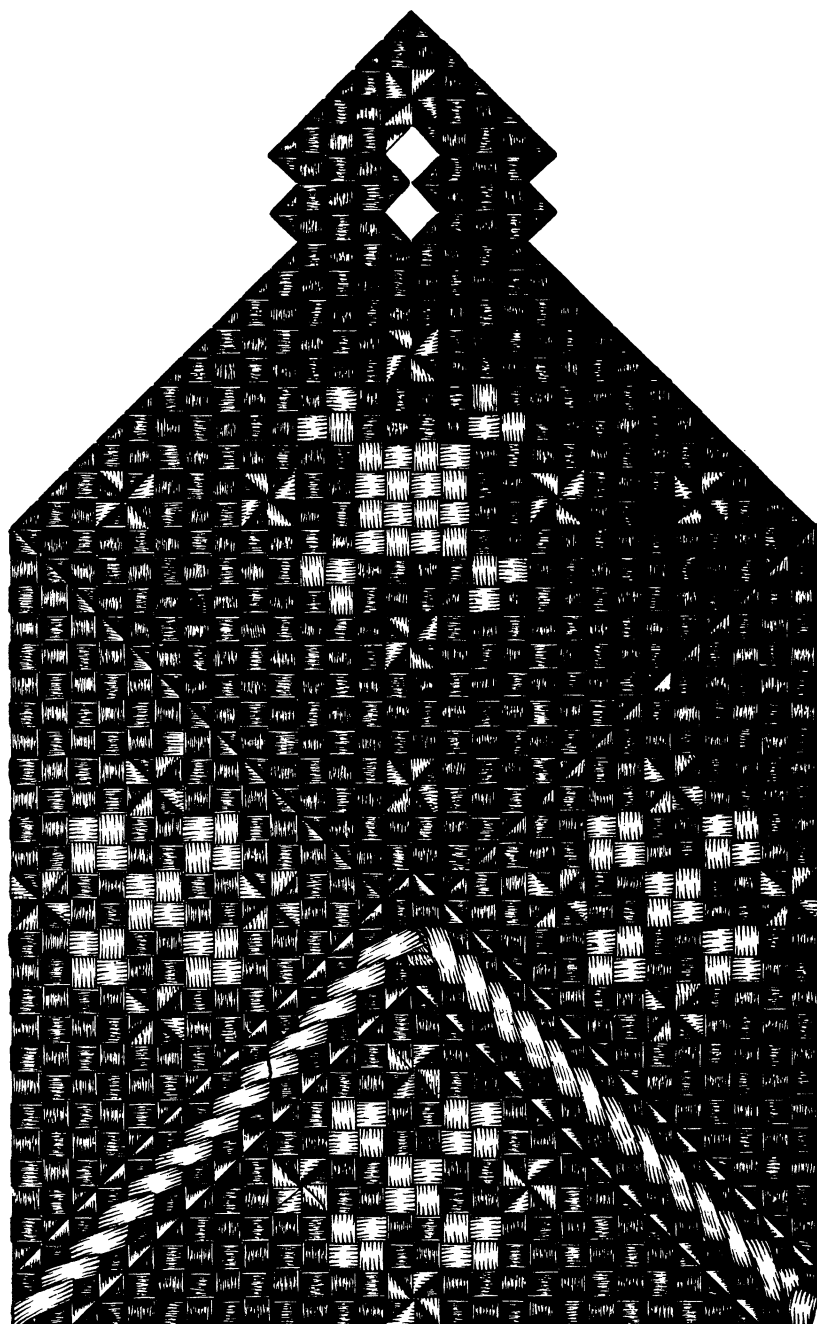


Plate XXIII. Wall pocket.

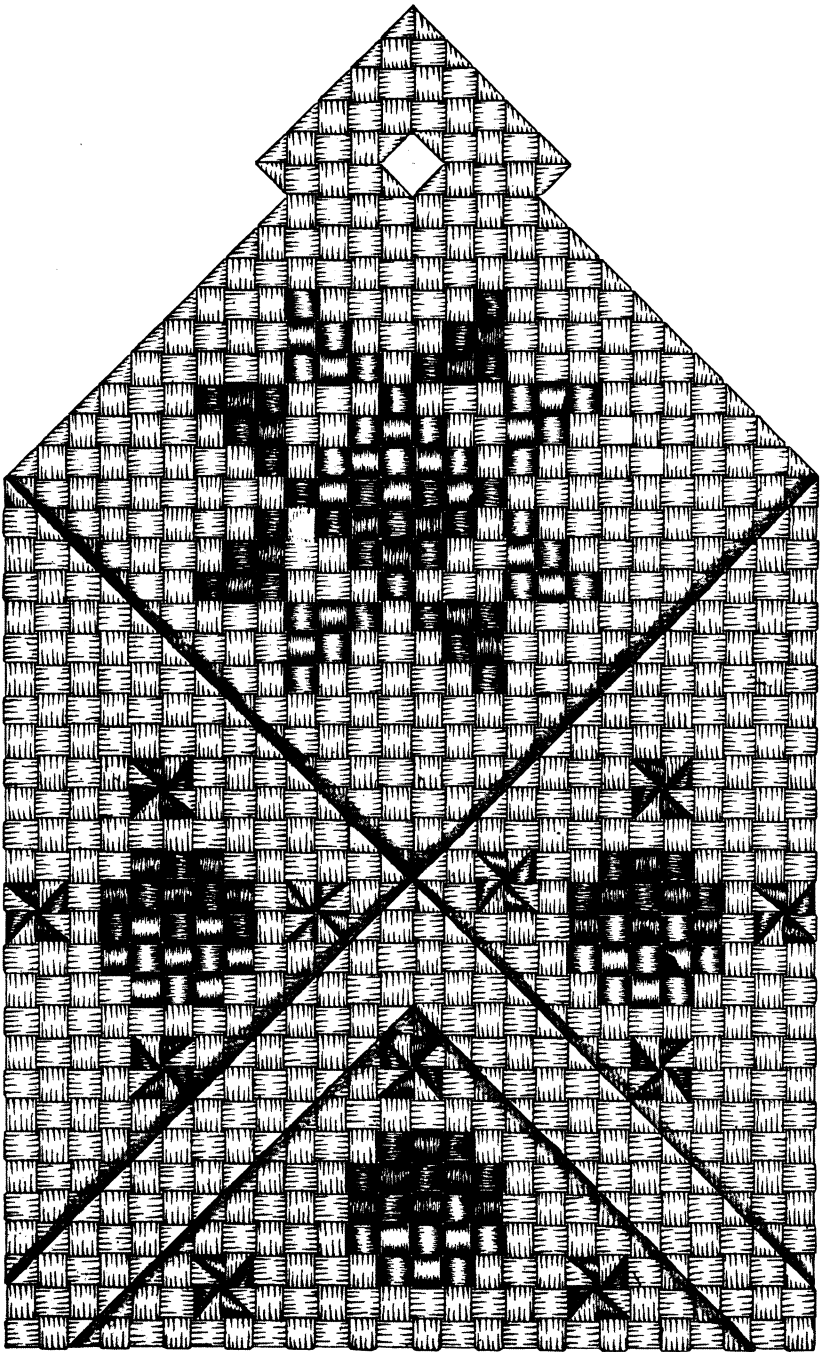


Plate XXIV. Wall pocket.

in the sewing. If possible, color the threads the same as the braid to be used.

Make a plain mat. When of sufficient size, about 20 centimeters each way, it may be cut into various shapes—circular, oblong, oval, etc. The circular mats may be formed into circular lamp mats (Plate X) and wall pockets (Plates XI, XII,

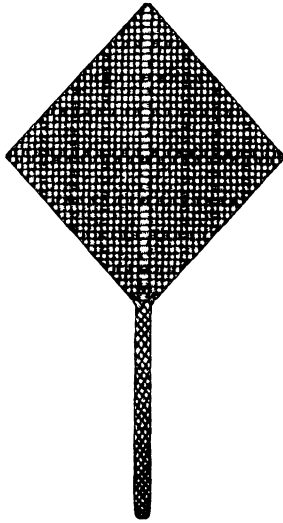


Plate XXV. Fan.

XIII). Eye shades (Plate XIV) may be modeled from these mats by cutting them into their respective shapes. They may be finished with braid neatly sewed around the edges.

A thicker square table mat (Plate XV) may be made by taking twenty-four strips 1 centimeter wide and 24 centimeters long. Twelve of these strips are woven across the other twelve

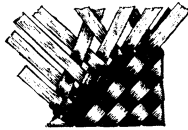


Plate XXVI. A cushion corner.

and at the edges. Each strip has a double turn at right angles and the end of each strip is tucked into the body of the mat. This gives three thicknesses.

The picture frame (Plate XVI) and tray (Plate XVII) are applications of this weave. Other articles may be made of this weave, as cardcases, boxes, and baskets of various shapes.

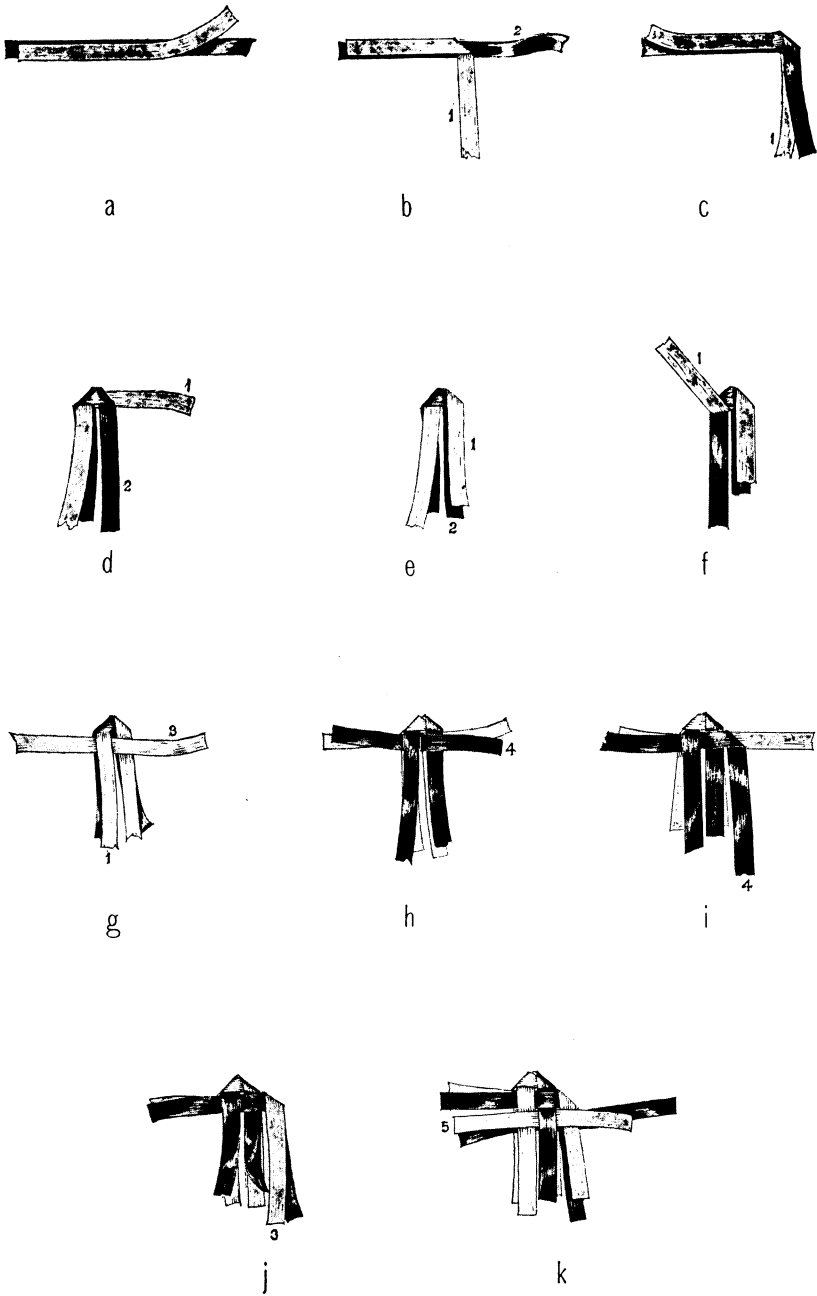


Plate XXVII. Simple over and under weave, with cushion corners.

For the cardcases, make a mat somewhat longer than four times the required width of the case, then fold the ends toward the center, tuck the ends of the strips over the edges, and weave on the other side so as to secure the baskets firmly.

In making boxes, or oblong baskets with handles (Plate XVIII), the bottom is woven first, then the whole of one side. The weave is then firmly held in the left hand by the last strip

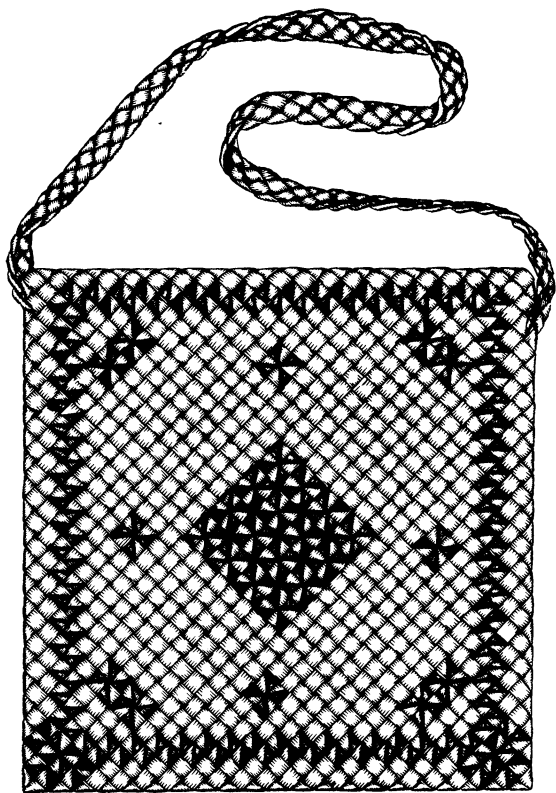


Plate XXVIII. Book satchel.

which is to form the adjacent side to the left of the side just finished. The strands are then woven in one by one, and the other two sides are made in the same manner. This is a necessary precaution. If each strand is woven all around the box separately, it will pull out and the box cannot be woven firmly, and little children will not be able to handle this weave.

Dress or waist slip.—Make a mat 50 centimeters long and 30 centimeters wide and have the loose ends extend at least 15

centimeters beyond the edges. Weave bamboo splints into the edges, then fold all the ends over these and insert into the weave on the opposite side. Do not let the splints extend beyond the edges. To insure sufficient rigidity, a few more bamboo splints may be inserted crosswise.

These mats may be finished by the older pupils with sinamay flaps, one of which is fastened at each edge, folded over

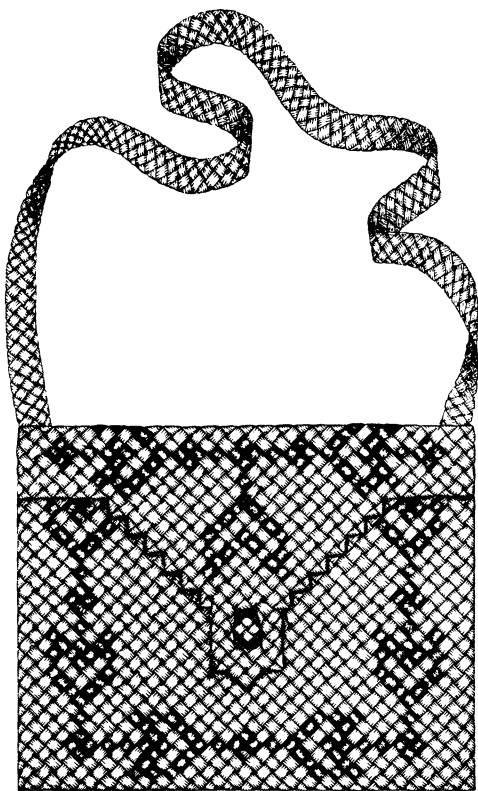


Plate XXIX. Hand bag with cover.

the top, and provided with ribbons or clasps. A slip made in this manner will preserve dresses or waists while they are packed in trunks or suitcases.

(b) WITH CORNERS HAVING A DOUBLE TURN AT RIGHT ANGLES AND STRIPS RUNNING DIAGONALLY (PLATE XIX).

This weave has the strips running diagonally from the edges and corners instead of perpendicularly, as those shown on Plate XIII. This weave may be begun at one corner or in the body

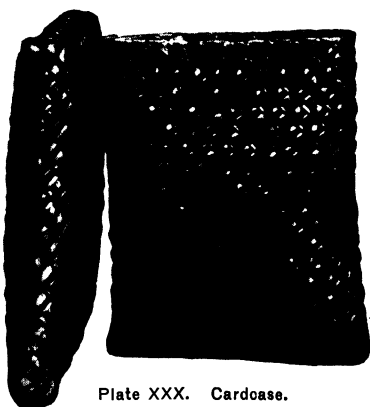


Plate XXX. Cardcase.

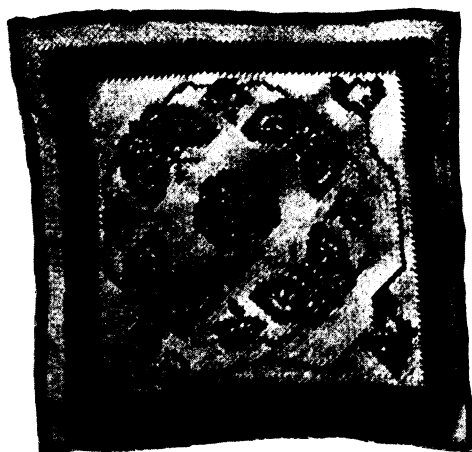


Plate XXXI. Cushion.



Plate XXXII. Cushion.

of the mat, and the corners and edges turned later. The latter method is fully illustrated in *THE PHILIPPINE CRAFTSMAN* (Vol. I, No. 3, pp. 171-173). In the former method the first strip is folded at right angles, and then again at right angles,

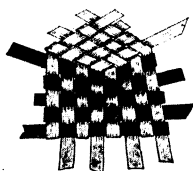


Plate XXXIII. A bayon corner.

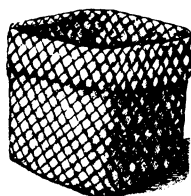


Plate XXXIV. A square box.

so that the two ends are lying adjacent to each other as shown in step 10, page 174, of the same issue of *THE PHILIPPINE CRAFTSMAN*. A new strip is inserted and the right end folded once at right angles. One strip after another is thus added until there are sufficient to form one side.

Caution.—All corners should be exactly at right angles. The edges should be in a straight line and even. All ends should overlap each other at least 15 centimeters.

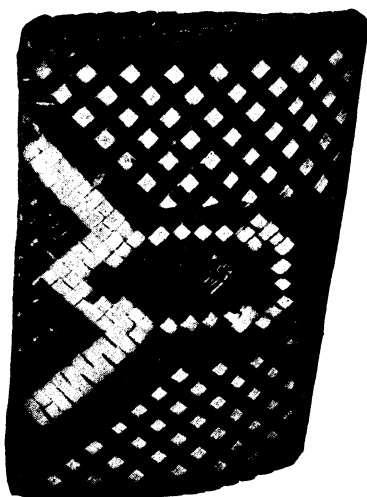


Plate XXXV. Card case.

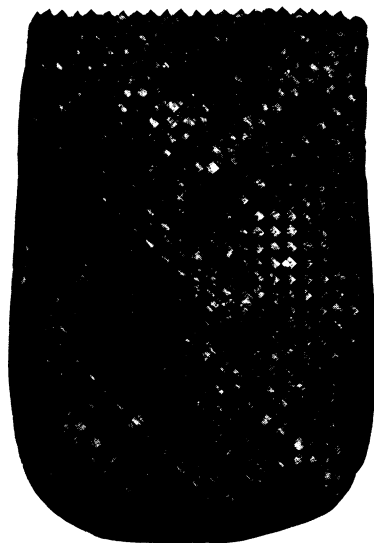


Plate XXXVI. Small bag (bayon).

Variations of this weave are:

Calendar back (Plate XX), one mat placed upon a larger one of a different color. The sizes may be made to suit the taste. Pupils may draw their own pictures to place on top.

Petate (Plate XXI), 20 centimeters by 32 centimeters—14 strips by 24 strips, 1 centimeter wide. This is doll's size.

Square doily, table mat, or lamp mat (Plate XXII), decorated as desired.

Hammock.—This is a mat like that shown in Plate XXI with the ends folded and attached to bamboo sticks. A loop which is used for support is fastened to the sticks.

Cornucopia, or receptacle for various purposes, 18 strips by 18 strips. The two adjacent sets of strips are woven together forming a cone. It may be decorated as desired.

Wall pocket (Plates XXIII and XXIV).

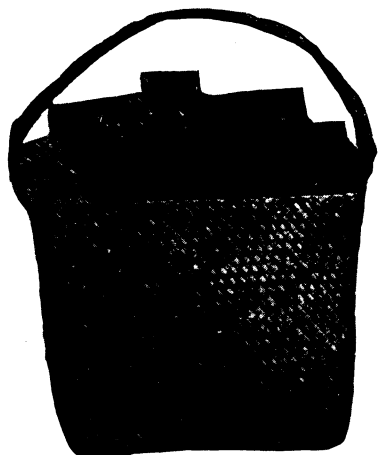


Plate XXXVII. Hand bag.



Plate XXXVIII. Pouch.

Book cover for home-made design or drawing book. This is a plain oblong mat to be folded in two, appropriate to the size, leaves to be inclosed within. The cover may be decorated as desired. It may be closed with a button and clasp made of braid.

Fan (Plate XXV).—This fan may be made more elaborately.

Dress or waist slip.—Make a mat of the size and shape as the dress slip described in the previous weave, and finish in the same manner.

(c) WITH CUSHION CORNERS (PLATE XXVI).

This weave has but one edge at the bottom and two sharp corners. Plate XXVII shows the successive steps, the num-

bers indicating the color scheme, as follows: 1, white; 2, red; 3, white; 4, red; 5, white.

It is begun with two strips, held firmly in the middle, one on top of the other (Plate XXVII). The right end of the



Plate XXXIX. Double weave.

upper strip (1) is folded at right angles with the fold inside (fig. *b*) and the under strip (2) is brought over this fold and bent down, overlapping the end (1) (fig. *c*). This is now turned so that the left end is held vertically in the hand.

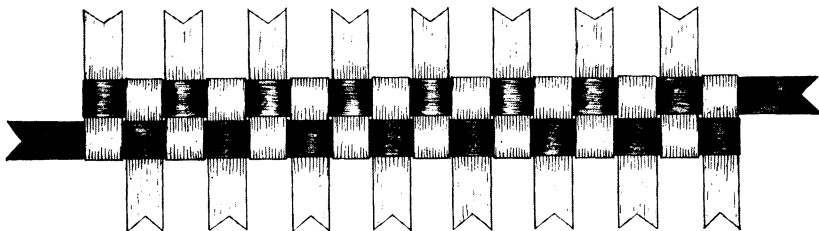


Plate XL. Bookmark.

The end (2) is now on top and is folded under (fig. *d*), and (1) is folded on top of (2) (fig. *e*). The left end of (1) is then raised (fig. *f*) and a strip (3) laid across and (1) is lowered (fig. *g*). The weave is then turned over and a strip (4) is in-

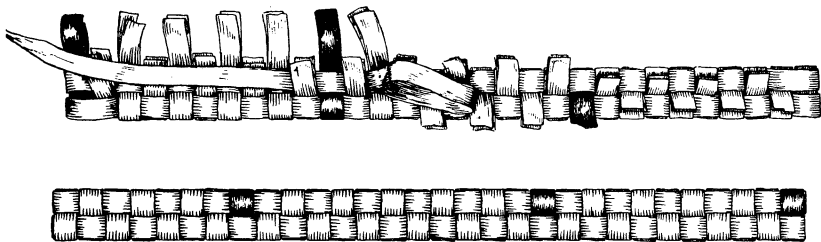


Plate XLI. Centimeter measure.

serted in the same manner (fig. *h*); (4) is then folded under (fig. *i*) parallel to the two pairs of strips, and (3) is folded on top (fig. *j*). The middle strip is then raised and a strip (5) woven in (fig. *k*). The weave is again turned over and the first

and third strips are raised and another strip woven in. The ends are again turned over as before. The manner of continuing is now obvious.

When the edge is long enough, the corner is turned as shown in Plate XXVI. The sides are then woven in the same manner, the right and left woven alternately to the required height.

With this weave many valuable articles may be made, ac-

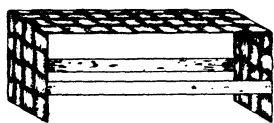


Plate XLII. Doll's bench.

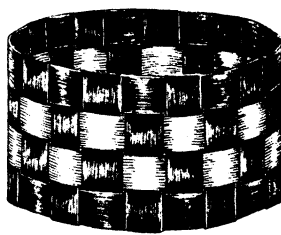


Plate XLIII. Napkin ring.

ording to shape and size, as book satchels, sugar bags, or market bags, cardcases, moneybags, cushions (Plates XXVIII and XXIX).

The pupils should be cautioned to have their strips long enough for the handles which, in order to insure their strength, should be woven from the bottom. They should be inserted from the

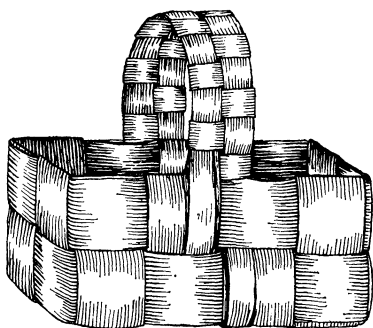


Plate XLIV. Oblong basket.

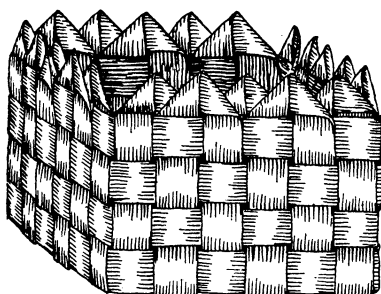


Plate XLV. Square basket.

top edge of the basket, or they will soon unravel with a little wear.

The book satchels may be decorated as desired.

The sugar bag, 28 by 50 centimeters, may be used as a market bag.

Since the strips of buri are not sufficiently long and much splicing is necessary, this bag involves a lesson in splicing.

Great care must be used in having the splicing done in such a manner that the bag is firm and even throughout. There should be no bulges nor any looseness in the weave anywhere.

The cardcases (Plate XXX) and purses are provided with covers, which need to be made larger than the body. An extra

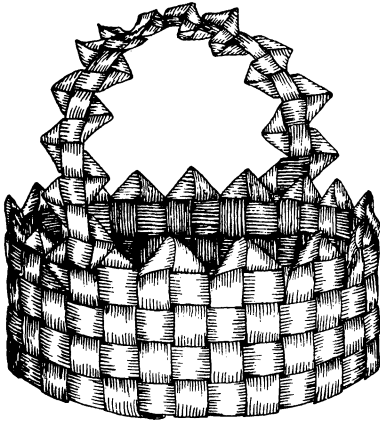


Plate XLVI. Round basket.

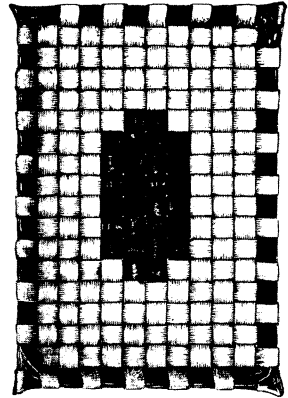


Plate XLVII. Tray.

pair of strips is added to the cover. The covers may be decorated and the edges finished with fancy weaves. The bodies of these weaves must have the edges as plain and smooth as possible, so that the covers can slip over them very easily. If this is not done, too much wear will destroy the edges and covers.

Cushions (Plates XXXI and XXXII) are woven to the required size. A convenient size is 22 centimeters square. Be-

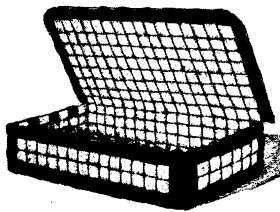


Plate XLVIII. Oblong box with cover.

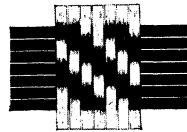


Plate XLIX. Sawali weave.

fore closing they may be filled with kapok, moras, grasses, etc. They furnish an opportunity for developing typical Filipino designs, and are suitable for chairs or calesas.

The handles attached to the fans are often covered with this weave, one or two colors being used.

(d) WITH BAYON CORNERS.

Articles made with bayon corners have their bottoms either oblong or square. Either one may be made from the same beginning (Plate XXXIII).

A square box (Plate XXXIV) is made by weaving a square 16 by 16 centimeters. It will be found that the edge of the box will measure eleven-sixteenths of the edge of the square, or, in

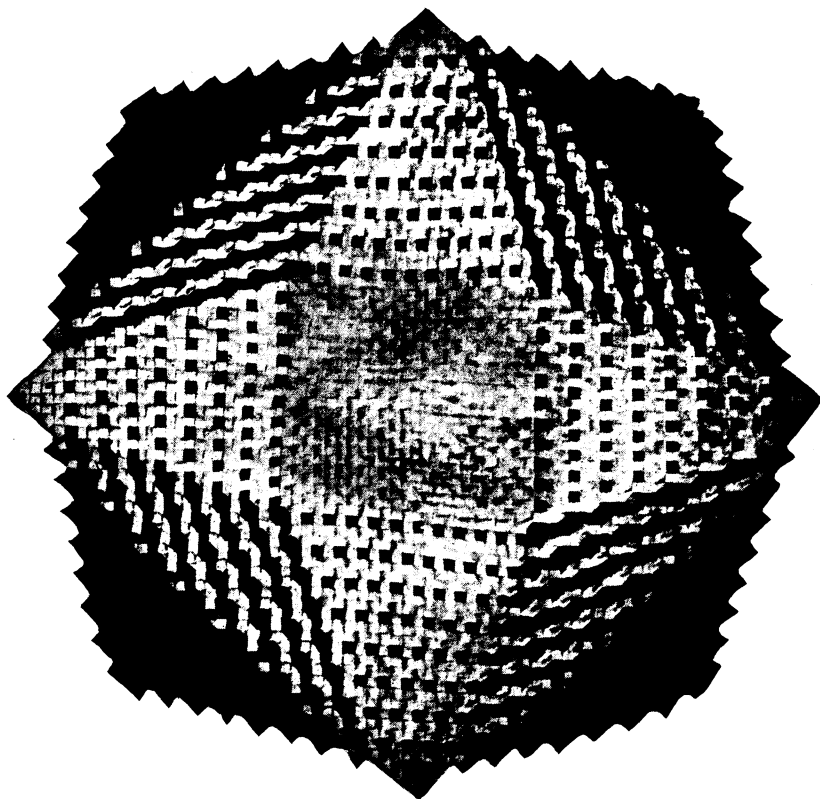


Plate L. Mat.

this case, 11 centimeters. The 2 strips in the middle of one edge are crossed over each other, and the left-hand strip is woven through all the strips to the left corner. All the rest of the strips of that edge are then woven, and the other edges are finished in the same manner. The sides are then completed.

For the oblong box a pair of strips is selected on either side of one of the corners and the two edges are woven to the end

as for the square. The corresponding pairs from the opposite corner are crossed in the same manner and the sides woven.

Variations of this weave are: Cardcases (Plate XXXV), bags

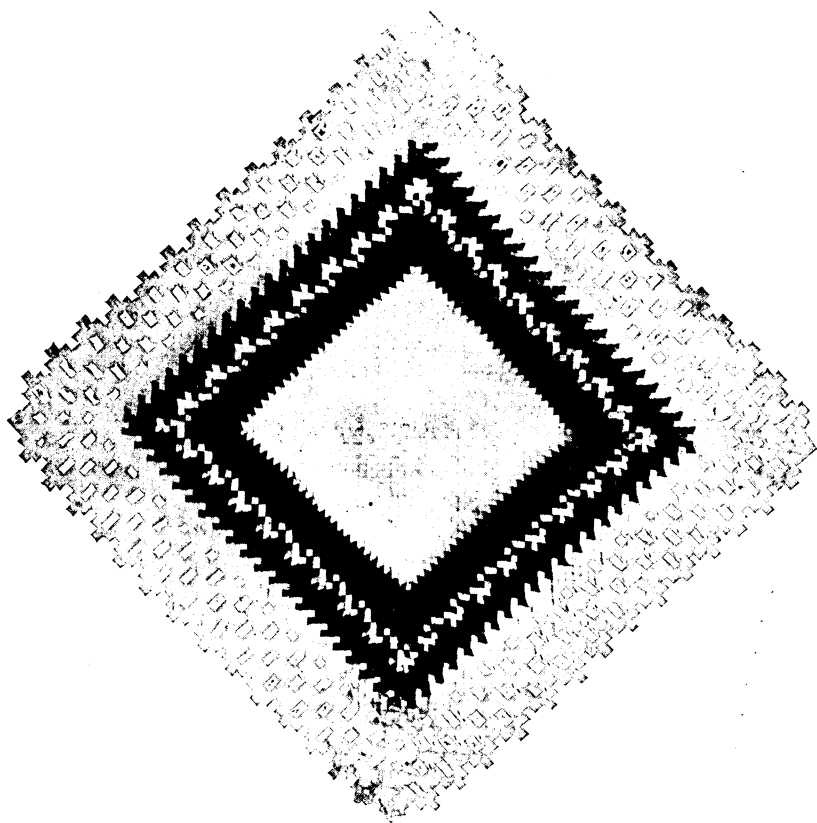


Plate LI. Doily.

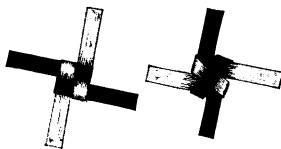


Plate LII. Knot weave.

(Plate XXXVI), oblong boxes, money purses, desk baskets, hand bags (Plate XXXVII), pouches (Plate XXXVIII). These may be made as elaborate as the weaver desires.

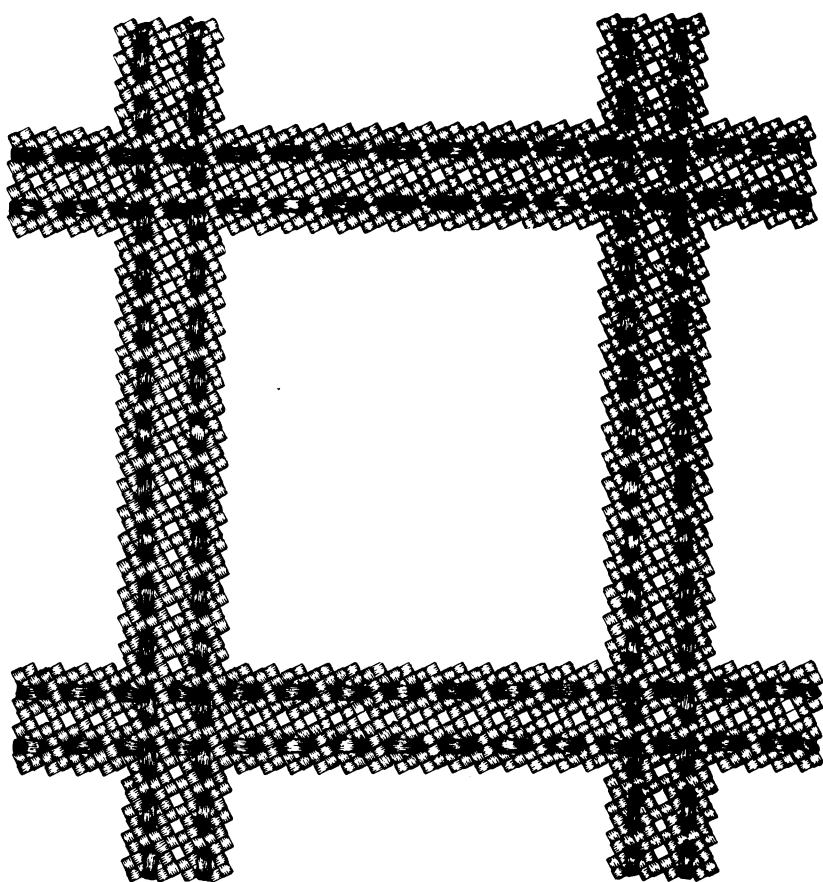


Plate LIII. Picture frame.

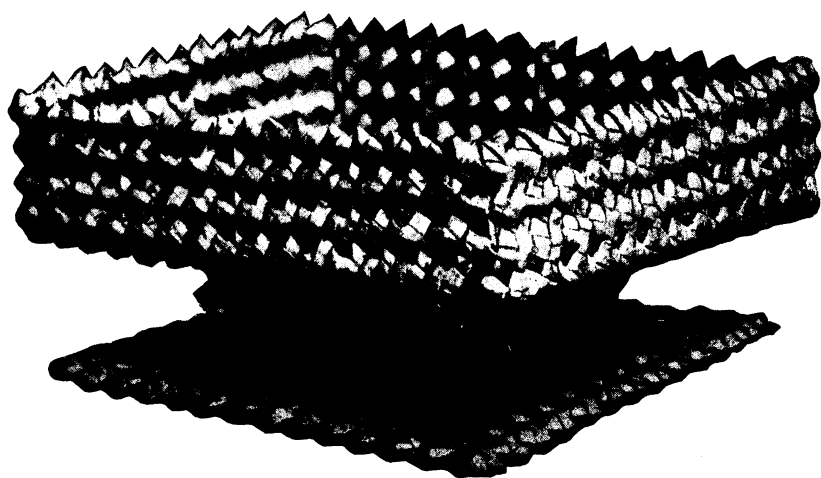


Plate LIV. Tray.

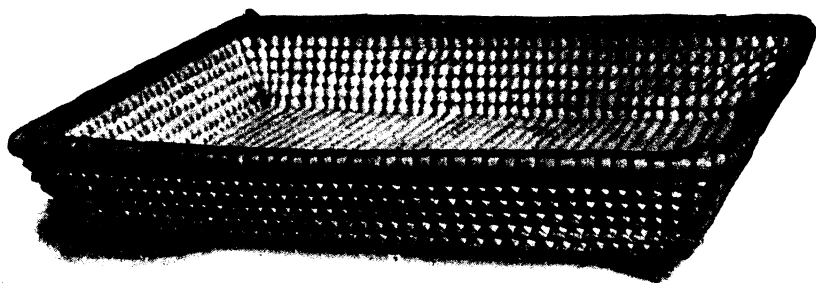


Plate LV. Desk basket.

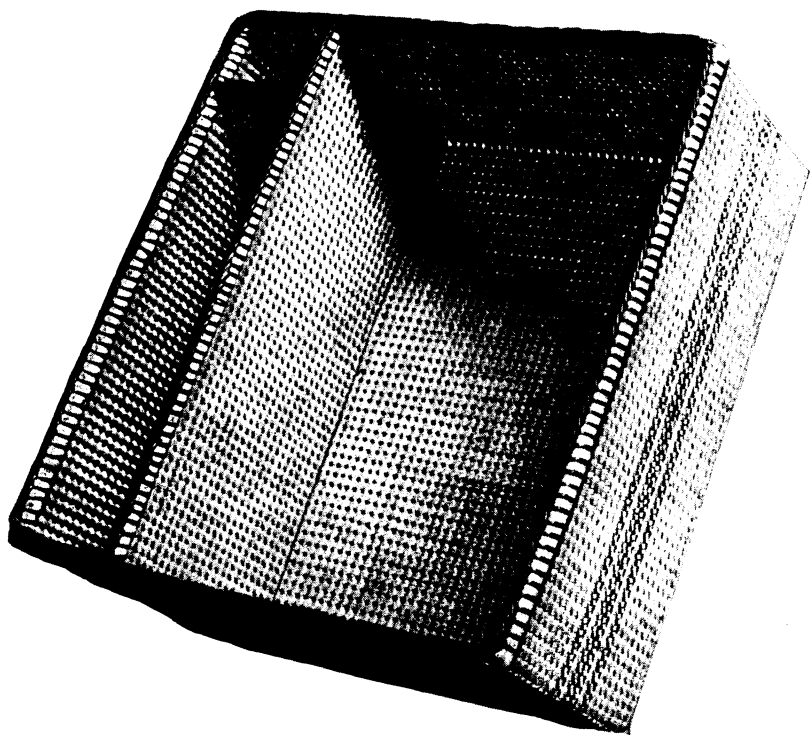


Plate LVI. Desk basket with compartments.

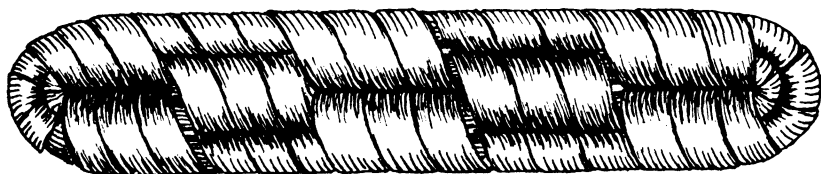


Plate LVII. Coiled weave.

IV. DOUBLE WEAVE.

In the double weave all strips are folded in half. (Plate XXXIX.)

The folded strips are laid vertically before the weaver, the right-hand strip being open at the top, the next closed, the next open, and the rest alternating in this manner. The strips used for cross weaving also alternate in this way, and the first strip used is closed at the right end. An even number of pairs only can be used either way.

The bookmark (Plate XL).—The bookmark is an application of this weave in the simplest form. Take 2 colored strips, 40 centimeters long and 1 centimeter wide, and 16 white strips, 8 centimeters long and 1 centimeter wide. Lay the long strips,



Plate LVIII. Round mat.

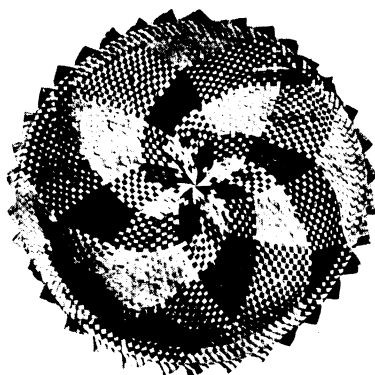


Plate LIX. Circular cushion.

folded, as directed above, then weave the 16 short strips into these.

Draw all ends tightly together. To hold the strips firm, they may be pasted on the inner sides.

The centimeter measure (Plate XLI).—This measure is made the same as the bookmark, but should be 30 centimeters long when finished. All the strips should be white, except the tenth, twentieth, and thirtieth cross strips, which should be of a bright, contrasting color. The ends should be turned back and folded under with the long strips as shown in the illustration.

This centimeter measure should find a daily use in the school-room. The little child can easily learn that the width of each strip equals 1 centimeter. He thus gets facts, in a simple easy way, that are of immense value to him in his later studies. He can measure various objects with this tool, and have dimensions

well fixed in his mind in a mechanical way. By actual practice, he gets some of the fundamentals of arithmetic.

Start him on the plan of measuring things and his interest will have no bounds. Because he is interested, he will unconsciously acquire knowledge that would otherwise take him long, tedious hours to learn in his later school studies. Other variations of the double weave are:

Doll's bench (Plate XLII) :

4 strips, 44 centimeters long 1 centimeter wide; 18 strips,
12 centimeters long 1 centimeter wide.

Cut off all the ends and insert a narrow strip through the second row from each end and draw the sides together, so that they will be perpendicular to the center part.

Napkin ring (Plate XLIII) :

16 strips, 14 centimeters long 1 centimeter wide.

4 strips, 44 centimeters long 1 centimeter wide.

Oblong basket (Plate XLIV) :

4 strips, 36 centimeters long 2 centimeters wide.

2 strips, 46 centimeters long 2 centimeters wide.

1 strip, 84 centimeters long 1 centimeter wide.

14 strips, 7 centimeters long 1 centimeter wide.

Square basket (Plate XLV) :

12 strips, 36 centimeters long 1 centimeter wide.

16 strips, 24 centimeters long 1 centimeter wide.

Round basket (Plate XLVI) :

4 strips, 90 centimeters long 1 centimeter wide.

15 strips, 16 centimeters long 1 centimeter wide.

13 strips, 32 centimeters long 1 centimeter wide.

1 strip, 52 centimeters long 1 centimeter wide.

1 strip, 80 centimeters long 1 centimeter wide.

Caution.—In making this round basket the cross strips must consist of an odd number of pairs, so that the strips will fold over each other properly at the bottom.

The four long strips (90 centimeters) are for the warp on the side of the basket. The 15 strips (16 centimeters) and 13 strips (32 centimeters) are for the woof to be placed ultimately, so that all the short ends open on one side, and the long ends on the other side of the band. The 2 strips (52 and 80 centimeters) are woven in alternately with the 16-centimeter strips for the handle. When the band is finished and all strips drawn up tight, the ends are woven together, and this circular ring is fitted snugly over a section of bamboo, with the long strips up, to be folded across the bottom, then one after another

inserted in the opposite apertures. The 2 long strips are finished to form the handle.

Tray (Plate XLVII) :

12 strips, 48 centimeters long 1 centimeter wide.

18 strips, 32 centimeters long 1 centimeter wide.

1 strip of a different color, 66 centimeters long 1 centimeter wide.

Decorate the center as desired.

Doily :

28 strips, 36 centimeters long 1 centimeter wide.

Use two colors and have several pupils arrange these colors differently. Some may use 14 of one color and weave across those of another color, or 8, or 12, or 16, may be of one color around the edges and the center ones of the other color. Trim the ends neatly.

Fan: Make the same as the doily above and insert a handle. Cover the handle with the cushion weave.

Square box with cover :

8 strips, 64 centimeters long 1 centimeter wide.

8 strips, 48 centimeters long 1 centimeter wide.

16 strips, 32 centimeters long 1 centimeter wide.

8 strips, 28 centimeters long 1 centimeter wide.

1 strip, 56 centimeters long 1 centimeter wide.

Colored strips to decorate the box.

Oblong basket :

13 strips, 64 centimeters long 1 centimeter wide.

8 strips, 80 centimeters long 1 centimeter wide.

2 strips, 88 centimeters long 1 centimeter wide.

1 strip, 132 centimeters long 1 centimeter wide.

16 strips, 24 centimeters long 1 centimeter wide.

Colored strips to decorate.

Oblong box with cover, 16 by 8 by 4 centimeters (Plate XLVIII) :

16 strips, 64 centimeters long 1 centimeter wide.

8 strips, 72 centimeters long 1 centimeter wide.

16 strips, 28 centimeters long 1 centimeter wide.

32 strips, 48 centimeters long 1 centimeter wide.

8 strips, 60 centimeters long 1 centimeter wide.

1 strip, 80 centimeters long 1 centimeter wide.

V. THE SAWALI WEAVE (PLATE XLIX).

This weave is described in *THE PHILIPPINE CRAFTSMAN* (Vol. I, No. 3, p. 177), and is used extensively for mats. Pupils may practice on designs, making squares 12 by 12 centimeters. The

teacher may collect these designs and put them into book form. They may be used as reference for the school. It would be well to try combinations of harmonious colors, not more than two.

A button basket or spool basket may be made of this weave, using the strips double. The edge may be provided with reinforced rattan, and bound with rattan, nito, or buri.

VI. THE OPENWORK WEAVE.

(See back cover design.)

The openwork weave is described in *THE PHILIPPINE CRAFTSMAN* (Vol. I, No. 3, p. 181). Many pretty articles are designed from this weave which gives opportunity to the weaver to use his inventive talent.

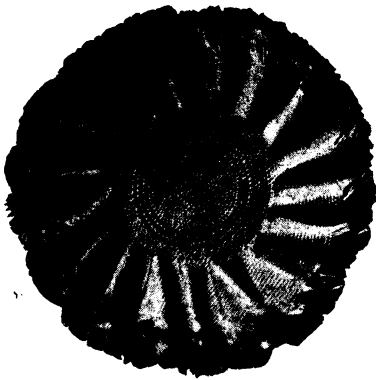


Plate LX. Lamp mat.

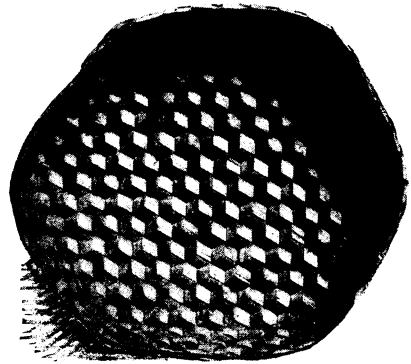


Plate LXI. Tray.

The pupil should by this time have developed so much skill that very fine strips may be used. The narrower the strips are, the prettier the design.

Mats (Plate L) and doily (Plate LI) are samples of this weave.

VII. KNOT WEAVE (PLATE LII).

The knot weave is a simple and usually a fascinating weave for little children, but they are not able to turn out very fine articles with this weave at their initial attempts. The first articles they make should have a flat surface, such as picture frames (Plate LIII).

The stitches to be used as crossbars should be of even thicknesses, and all of them should be prepared before the work is begun.

A dress slip may be made as described in the "simple over and under weave." The top may be made of sinamay, or two pieces of knot weave may be made of the same size, one for the bottom and one for the top, and the two fastened together with ribbons.

Plate LIV shows a tray or cardcase. Plate LV shows a desk basket, 30 by 40 centimeters and 7 centimeters high. The edge is reinforced with rattan and decorated with nito. Plate LVI shows a desk basket with compartments for paper, envelopes, and pencils. Its dimensions are 28 by 28 by 11 centimeters.

The edge is reinforced and bound with rattan and decorated with nito.

The knot weave admits of the making of a large variety of

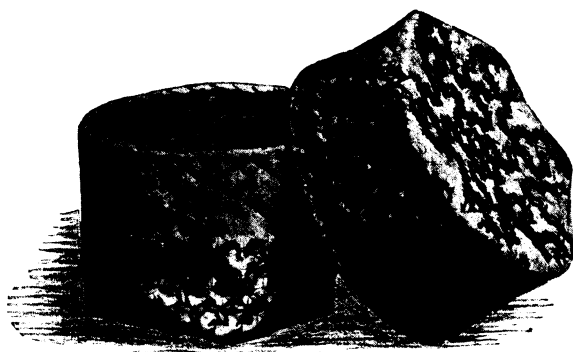


Plate LXII. Collar box.

objects in addition to the above, such as baskets, book satchels, and toy furniture.

VIII. COILED WEAVE (PLATE LVII).

Round, oval, flat, and deep trays, which are useful as pin trays and desk baskets, are made from this weave. The natural color of buri weaves mixed with a very dark shade makes a very pleasing combination.

This weave is easily learned, but small pupils cannot do very neat work with it.

IX. HAT WEAVE.

A number of weaves are used to begin the crown of a hat, and each one of these could be used in the making of a round mat (Plate LVIII), round table doily, lamp mat or round cushion.

The two easiest weaves are the star and square center.

It is advisable to have the pupils make a number of small round doilies, at first with wide strips, then with narrower strips of both star and center beginnings, so that they can master every step without assistance.

The circular cushion (Plate LIX) is a very serviceable article.

The lamp mat (Plate LX) with fluted edges is a variation of the weave.

With all this preliminary weaving, it is not difficult for the child to begin hat weaving, for the first steps are found to be the most difficult.

X. HEXAGONAL WEAVE.

This is the most difficult weave and should not be attempted by young pupils unless they have mastered all the other weaves. The weave is clearly demonstrated on pages 191 and 192 of

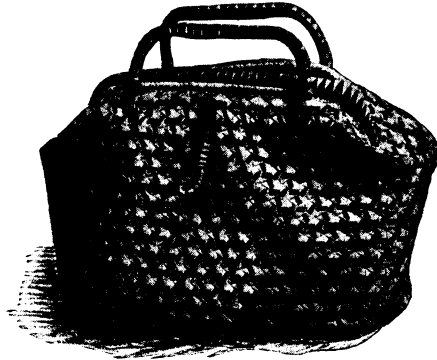


Plate LXIII. Hand bag.

THE PHILIPPINE CRAFTSMAN (Vol. I, No. 3). It can be used for the making of hexagonal mats, trays (Plate LXI), collar boxes (Plate LXII), hand bags (Plate LXIII), handkerchief cases, and cushions.

Other materials may be used in some cases as substitutes or as additional materials for finishing touches to some of the articles made, or for ornamenting them.

COCONUT LEAVES.

Coconut leaves are a close second to buri with regard to ease in manipulation. So, whenever these are available and less expensive than buri leaves, they are quite desirable for use in teaching the various weaves, although the leaves do not have the lasting qualities of buri. Coconut leaves are prepared, dried, and colored similarly to buri leaves.

If neither buri nor coconut leaves are easily available, karagumoy, nipa, or pandan may be utilized, but these are thicker than buri leaves and not so easily manipulated by little, weak, unskilled fingers. Sabutan is too expensive for practice work.

Tikug and bamboo lend themselves readily to the making of a large number of articles enumerated in the course.

OUTLINE OF COURSE BY GRADES.

This course may be divided into grades as follows:

GRADE I-B.

1. Chain weave (Plates I, II, III, IV).
2. Braids (Plates V, VI, VII).
3. Circular lamp mat (Plate X).
4. Wall pocket (Plate XI).
5. Wall pocket (Plate XII), optional.
6. Eye shade (Plate XIV).
7. Square table mat (Plate XV).
8. Picture frame (Plate XVI).
9. Tray (Plate XVII).
10. Bookmark (Plate XL).
11. Centimeter measure (Plate XLI).
12. Doll's bench (Plate XLII), optional.
13. Napkin ring (Plate XLIII), optional.
14. Oblong basket (Plate XLIV).
15. Square basket (Plate XLV), optional.
16. Round basket (Plate XLVI).
17. Tray (Plate XLVII).
13. Hand bag (Plate XXXVII).
14. Hand bag with cover (Plate XXIX), optional.
15. Doily.
16. Fan, optional.
17. Cardcase (Plate XXXV).
18. Oblong basket (Plate XVIII).

GRADE II.

1. Slipper pocket.
2. Small cases (Plate XXX), one of them.
3. Sugar bag (Plate XXXVI).
4. Book satchel (Plate XXIX).
5. Case (Plate XXXV).
6. Bag, small bayon (Plate XXXVIII).
7. Box (Plate XXXIV).
8. Bayon desk bag.
9. Hand bag (Plate XXXVII).
10. Small case.
11. Pouch (Plate XXXVIII), optional.
12. Desk basket (Plate LV), optional.
13. Calesa cushion (Plates XXXI and XXXII).
14. Tray (Plate LIV).

GRADE I-A.

1. Calendar back (Plate XX).
2. Petate for doll (Plate XXI).
3. Lamp mat (Plate XXII).
4. Wall pocket (Plate XXIII).
5. Wall pocket (Plate XXIV), optional.
6. Fan (Plate XXV), optional.
7. Braids (Plate VIII).
8. Oblong box (Plate XLVIII).
9. Square doily (Plate LI), optional.
10. Small wall pocket (Plate XIII), optional.
11. Picture frame (Plate LIII).
12. Tray or cardcase (Plate LIV), optional.

GRADE III.

1. Mat (Plate L).
2. Doily (Plate LI).
3. Small wall pocket (Plate XIII).
4. Desk basket (Plate LV).
5. Desk basket (Plate LVI), optional.
6. Circular cushion (Plate LIX).
7. Circular mat (Plate LVIII).
8. Lamp mat (Plates L, LX).
9. Hat.

If pupils wish to take a hat course they may use the following instead of the above:

1. Circular cushion (Plate LIX).
2. Circular mat (Plate LVIII).
3. Hats.

The first course in Grade III may be followed by:

1. Hexagonal mat.
2. Tray (Plate LXI).
3. Collar box (Plate LXII).
4. Hand bag (Plate LXIII).
5. Cushion.

If the hat-weaving course is chosen, the pupil may continue to make hats in the plain over and under weaves and in the sawali weave, making the strips finer for each new hat. Various beginnings may be used.

o o o

RUSSIAN SCHOOLS.

John H. Snodgrass, consul-general at Moscow, Russia, reports on the school system of the Syr-Daria district. The children of the Russian population attend the public schools, whereas most children of the native population are educated at Mohammedan religious schools—24 per cent attending the Mohammedan schools, whereas only 1.09 per cent attend the Government schools. The latter children are those whose parents come into close contact with the Russians and have direct business relations with the same.

“The Tashkent Handicraft School answers the requirements of industrial instruction, the pupils being trained for joiners and locksmiths. At the city schools and at some of the village preliminary schools there have been introduced handicraft classes where shoemaking and joinery are taught. The Aulieatinsk city school possesses a class for teaching gardening. In the district there are a gardening school, under the administration of the ministry of agriculture, and a technical school in Tashkent, under the administration of the ministry of ways of communication. There is no general program for industrial instruction.”

OPPORTUNITIES FOR CLERICAL EMPLOYEES.

By DR. B. L. FALCONER, *Director of Civil Service*, and R. H. WARDALL, *Principal, Philippine School of Commerce*.

GOVERNMENT SERVICE.

Qualifications required.—A good common-school education in English and a good constitution are preliminary requirements. The more thorough the preliminary education, the better are the prospects for advancement in the service. Most Filipinos take up stenography before they have a sufficient knowledge of English, and are thus never able to develop into good stenographers. At least a high-school education should be obtained before taking up stenography. In addition to a high-school education, those who intend to make a career in the civil service should take up stenography, bookkeeping, Spanish, mathematics, or some other branch that would prepare them to fill the more technical positions. The best age for entering the service is probably just after leaving school.

Nature of the occupation.—Appointment is usually made in the lower grades of the service. Those who have a good education, with special training in stenography, bookkeeping, law, Spanish, or some other branch, have excellent opportunities for advancing. In Manila the principal requirements of the service are for stenographers and typewriters, bookkeepers, draftsmen, and computers. In the provinces, bookkeepers, stenographers and typewriters, clerks of court, interpreters and translators for the courts, and assistant internal-revenue agents are required.

Pay.—Usually the entrance compensation is not large, but there are excellent opportunities for obtaining high salaries in all branches of the service if the employee is well qualified and devotes himself to preparation for the higher positions. Stenographers are in demand in all branches of the service and the salaries are good. Several Filipinos who have qualified in the senior Spanish stenographer examination are receiving ₱2,800 per annum. One Filipino only has qualified in the senior stenographer English examination, but several have passed the junior stenographer English examination and are receiving upwards of ₱1,200 per annum. Quite a number have passed the bookkeeper examination, and an assistant chief of division in the Bureau of Audits, at Manila, receives ₱3,600 per annum. The clerk of the Supreme Court is a Filipino who originally entered

a minor position in the civil service at ₱1,200 per annum, and he now receives ₱6,000 per annum. In the provinces, also, there are excellent opportunities for advancement in all branches. Those who enter the provincial treasury service, who master the requirements and duties of the position of treasurer, and who pass the assistant provincial treasurer examination are eligible for promotion to the position of provincial treasurer. There are at present 16 Filipino provincial treasurers receiving salaries ranging from ₱1,500 to ₱4,500 per annum. All of the provincial clerks of court are Filipinos, and many of them receive salaries of ₱2,400 per annum. Good interpreters and translators are also in demand in provincial courts.

Statistics.—During the fiscal year ended June 30, 1913, 1 Filipino passed the clerk of court examination in Spanish; 3 passed the bookkeeper examination in English; 11 passed the assistant draftsman examination and 16 passed the junior draftsman examination; 5 passed the assistant computer examination in English and 1 in Spanish; 1 passed the senior stenographer examination in English and 2 in Spanish; 8 passed the junior stenographer examination in English and 5 in Spanish; 1 passed the interpreter examination; 1 passed the translator examination; 6 passed the assistant provincial treasurer examination in English; and 2 passed the typewriter examination in English. The numbers appointed from these different registers were as follows: First-grade, English, 12; assistant computer, 6; junior draftsman, 11; senior stenographer, English, 1; junior stenographer, English, 3, Spanish, 3; senior translator, 1; junior translator, 2.

COMMERCIAL POSITIONS.

The Philippine School of Commerce was organized for the purpose of fitting young men and women for the Government service, for supplying the demand for bookkeepers and stenographers in the industrial and commercial establishments of the Islands, and for preparing young men and women for engaging in business on their own account.

Education.—Just to the extent that the man of business is relieved of the details of the office can he apply his resourcefulness in taking advantage of commercial and industrial opportunities which will better himself, improve the country and community, and advance his employees in position and salary. In order that the managers may be relieved of office details, there must always be available a large number of young men and women who have received a commercial education. This should

consist not only of training in commercial law, bookkeeping, penmanship, arithmetic, spelling, typewriting, Spanish, and the fine points of business English, but the pupils should be taught the importance of accuracy, neatness, punctuality, and reliability.

The stenographer, to be of the greatest value, should be able to take dictation in Spanish or translate into that language, if necessary. If he hopes to rise to a position of responsibility he should be able to master his employer's methods of doing business. He should possess initiative and executive ability, in order to be able to do things without being told and to make use of the shortest and best device in doing them.

Opportunities for employment.—One has only to scan the columns of the daily papers to ascertain the great demand for good bookkeepers and stenographers. The Philippine School of Commerce and the private commercial schools are unable to supply the demand for thoroughly trained graduates in stenography and bookkeeping. For this reason, as a matter of necessity, pupils with insufficient preparation are being given employment at the present time. No young man or woman prepared to do something well in the commercial line needs to be unemployed. It is only the one who is defective in English or arithmetic, or fails in accuracy, honesty, and other commercial virtues, who must seek long for a position.

With greater development of transportation, manufacturing, and commerce, there will be an increasing demand for capable clerks of all kinds. A look into the offices of the railways and newly organized commercial houses will give an idea of the great number of positions made available in recent years. As these institutions grow in number and size, new positions of responsibility will be open for those who show executive ability as well as a thorough knowledge of clerical work.

Compensation.—Entrance salaries are not large, but the beginner has the satisfaction of receiving reasonable pay while getting valuable training in actual business, the details of which must be learned before one becomes of much value to his employer. Rare, indeed, are the instances of commercially successful men and women who have been born into such positions. A study of such careers shows that in general they have started at the bottom and worked themselves by patient toil to positions of command. Particularly is this so in countries where development and progress have a new impetus. And in no career are there so many opportunities to become leaders as in the field of commerce.

Graduates from the Philippine School of Commerce receive an entrance salary of from ₱40 to ₱75 per month. During each school year about 25 pupils leave school before graduation to accept commercial positions paying from ₱30 to ₱60 per month. As the graduates have a more thorough preparation, they may hope to be promoted more rapidly than those who drop out before completion of the full course. A graduate in the class of 1907 is now stenographer in one of the leading commercial houses of Manila at a salary of ₱200 per month.

EDUCATION IN SIND.

Sind is one of the four divisions of the Bombay presidency in regard to education. The total cost of education in Sind during the fiscal year ending March 31, 1911, was \$518,718.16, of which amount almost half came from provincial revenues. Mr. Stuart K. Lupton, American consul at Karachi, India, made the following note in respect to industrial education in a special report which he prepared for the Director of Education:

“Industrial instruction is conspicuous by its absence in this district. The tendency of the youthful Indian is toward the Government service or a business position. I am of the opinion that this system is working a great deal of harm to India at present, as one constantly meets young men with the degrees of A. B. or A. M. of the Bombay University, who, having been educated largely at the expense of the Government, hold inimical feelings toward the Government because the Government does not provide them with positions to which they think they are entitled. There is a general decline in the efficiency of the so-called industrial population, largely because of the desire of those who would otherwise make good craftsmen to become Government employees, and of consequent recruiting from the lower orders of the population.”

NURSERIES.

By GEORGE WHITING, in charge of school gardens in the division of Batangas.

WITH the establishment of the Tanauan school nursery in 1910 at Tanauan, Batangas, the center of the citrus-fruit belt of the Philippine Islands, the Bureau of Education started an active campaign for the improvement of native fruits and the introduction of foreign fruits adapted to tropical climates.

At the time the nursery was established it had very little ground of its own, and the larger part of the work of planting and cultivating seedlings was carried on at the homes of the pupils. This had its disadvantages, but in reality proved of great benefit to the venture. In a short time nearly every yard was cleaned up and converted into a small nursery planted with citrus seedlings and other fruit trees and now thousands of orange seedlings are sent out from Tanauan to all parts of the Islands. As soon as the people saw that the school was sending out nursery stock in large quantities, many entered into competition, so that now, from a commercial point of view, it is no longer profitable to the schools.

The work of the school has been a success, as is shown by its large distribution of plants and the several prizes won. At the Philippine exposition of 1912, nearly one-half of the Batangas provincial exhibit was devoted to nursery stock from the school and to this exhibit a cup, gold medal, and two diplomas were awarded. In 1913 a separate booth was set aside for the school and a very creditable display was made. At both of these exhibits all of the trees that were salable after the expositions were over were sold at good prices and many orders were taken for future delivery. Arrangements are now being made for a much larger and more extensive exhibit for 1914.

Bureau of Education Circular No. 127, series 1912, extends the nursery work to all intermediate schools, giving gardening as an industrial requirement. It is expected that the plan now in operation in Batangas Province, which was made to conform to the above-mentioned circular, will result in placing in the homes, on sale, and for distribution thousands of superior fruit trees, ornamental shrubs, and vines.

It is the duty of the division industrial supervisor and his assistants to see that the schools of the division are furnished with good seeds and to give instruction in the proper methods of planting and cultivating and in grafting, budding, pruning, and training nursery stock.

It is not the intent of this article to deal with the complete establishment of a nursery, but a few suggestions may be pertinent and of assistance to those who are about to take up nursery work in their schools.

Location.—The nursery should be located in a sheltered and, if possible, moist locality. If no shelter is available, it would be well to plant bamboos to act as a windbreak on the sides from which the prevailing winds come. For shelter the madre cacao is recommended and should be planted in rows 3 meters apart. This tree is easily propagated from cuttings. It is absolutely necessary that the nursery be located near water, as in the dry season a great amount of irrigation will be necessary.

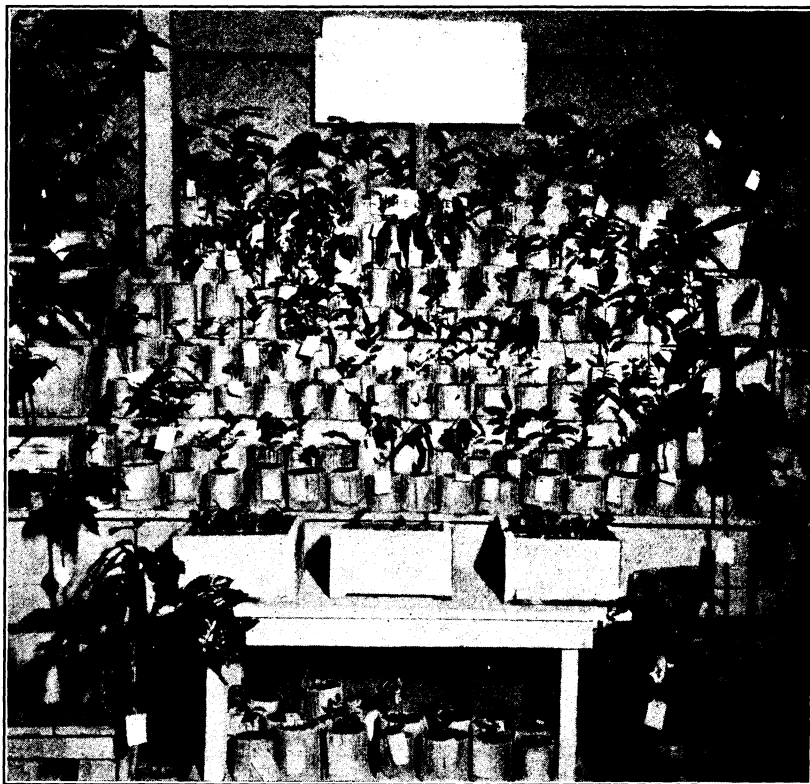
Soil.—The soil most adaptable to nursery work is fairly heavy rather than light—that is, its foundation should be clay and it should be well fertilized. If the land is too stiff, a small portion of sand may be added. The compost heap will be of great assistance in enriching the soil and keeping it in good condition. The land should be level and make perfect drainage possible, for if surface water is allowed to stand on the soil for two or three days it will be detrimental to the young trees. The cultivation must be thorough and deep, as many of the plants have long tap roots which need finely pulverized soil. A rotation of crops is necessary. After a crop of nursery stock is taken from the ground, it should be planted to some leguminous plant. Experience proves that a crop of nursery trees does not exhaust the land of its fertility. In fact, land from which trees have just been removed generally produces a very heavy crop of annuals. Yet, despite this fact, land will seldom produce two good crops of nursery stock in succession. The land may be replanted to trees after a crop of annuals has been harvested.

Plots.—Plots of standard size, 1 by 4 meters, separated by paths 25 centimeters wide, are recommended. These allow easy cultivation and the weeding of the plants without stepping on the plots. The plot should be raised slightly above the paths to permit the drainage of water after heavy rains.

Plots containing delicate plants should be shaded by screens, or pergolas, about 1 meter high. The frames may be made of bamboo and the coverings may be of any large leaves or brush.

Propagating sheds.—Every nursery should be supplied with a shed at least 2 meters wide, 6 meters long, and 2 meters high for germinating seeds that may be planted in pots, seed boxes, or bamboo tubes.

Bamboo tubes.—No other articles are so well adapted to the growing of plants as bamboo tubes. They are cheap and can be secured easily. Their sides are glazed, thus preventing the



Tanauan nursery exhibit, 1912.

soil from drying up as in the case when porous earthen pots are used. They are much deeper than the earthen pots, thus giving plenty of room for tap roots.

The bamboo should be cut across just below the nodes. This will give tubes open at one end and closed at the other. The closed end should be pierced with a large hole, and some small stones should be dropped into the tube so as to prevent the earth from closing the hole. On top of the stones, rotten leaves may be placed to prevent the earth from getting in among the

stones. For planting seeds the tube should be filled to within 3 centimeters of the top with fine rich soil, then given three or four slight taps to settle the soil. In watering the plant the tube is filled to the top, some water being permitted to run over the sides. In transplanting from the plots, dirt should be placed in the bottom of the tubes as far as the tap roots will reach, then the plant should be put in and the soil filled in around it. The soil is pressed gently around the stem at the top to prevent evaporation. In transplanting to the field, the plant can be easily removed from the tube and firmly set into the hole prepared for it.

Seed boxes.—Where it is desired to raise many plants in a small space, seed boxes are very convenient. These boxes should all be of the same size. Cases in which cans of petroleum are shipped will form very good and inexpensive boxes. One case will make three boxes, if bamboo strips are used for the bottoms.

The orange.—The orange will grow in almost any kind of soil, except a sandy one, providing it is well drained and has sufficient depth for long tap roots.

Propagation.—In the tropics, orange trees are grown from seeds, and for flavor and abundance of crops no better fruit can be grown from single trees than are produced here. In the southern part of the United States oranges are propagated by budding sour stocks. In Europe the best oranges are grafted, and as grafted fruits are variable in variety grown from its seed, it is believed by many that oranges will not breed true and that it is necessary to bud or graft in order to produce the best fruits. This, however, appears to be a fallacy in the Philippines, for it has been proved that orange seeds, for the most part, do breed true, and fine crops of oranges are grown here from seedlings.

If sown in seed plots, oranges should be sown in rows 20 centimeters apart and in hills 5 centimeters distant from each other. The orange seed has several embryos, consequently several shoots are likely to spring from one seed. The weakest of these shoots should be pruned off and only one strong stem left when the plant is transplanted. The seeds must be sown fresh from the fruit, as they soon lose their vitality and keep for only a very short time. They germinate very quickly and at the end of a year they are ready to transplant to the grove or to the budding or grafting bed. When transplanted to budding or grafting beds, they should be planted in rows 50 centimeters apart and in hills 20 centimeters distant from each

other. In planting in the grove, they should be set out by the triangular system from 6 to 7 meters apart. If it is found on transplanting the tree that the tap root has been injured, this should be pruned with a sharp knife. By no means should the roots be allowed to curl under each other when transplanted.

In this country it has always been the custom to leave a ball of dirt upon the roots of the tree when transplanted. It is not known whether this is necessary, but it has been proved that



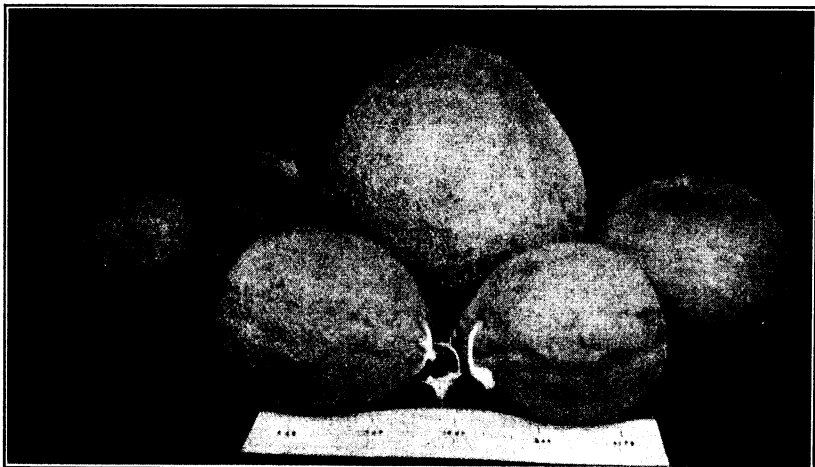
Industrial and sales exhibit.

trees which have been out of the ground for three weeks will grow, providing the soil was left on the roots.

In transplanting all kinds of trees, the holes should be dug some time before the plants are set out, in order to let the air circulate and act upon the dormant constituents of the soil. When the tree is set out, green weeds should be put in the hole and by no means should the same earth that has been taken from the hole be put back in. Good surface soil should be used. The weeds will act as green manure and in a few weeks rot and enrich the soil. After a few days the earth will settle around the tree and leave a cavity, which should be filled up with good soil.

Coffee.—Coffee should be treated the same as oranges in planting in the nursery. The seeds must be fresh and planted with the flat side down. In transplanting to the grove plenty of shade is needed. The madre cacao is recommended as a good shade for coffee.

Cacao.—Cacao should be treated the same as oranges in planting in the nursery, with the exception that seeds should be kept for about seven days before planting, when it will be found in most cases that they have started to germinate. The part of the seed that adheres to the stringy part of the pulp should be planted downward. If this part is not discernible, then the seed should be sown lengthwise. Cacao needs a warm moist soil and plenty of shade. It is advisable to plant it in a banana grove.



Pomelos.

Mango.—The mango seed has several embryos and each embryo will produce a young plant. The hard shell may be removed and the embryos separated before planting, but it is preferable to plant the seed as a whole, separating the young plants as soon as possible after germination, and transplanting to other beds.

Mango seeds retain their vitality for a few days only and should be planted as soon as possible after the ripened fruit is taken from the tree.

Cuttings.—Nearly all of the shrubs, bushes, and ornamental plants of the Islands, such as roses, violetas, gumamela, morado, and some fruits are propagated from cuttings. For this there is needed a propagating box filled with coarse, sharp sand or

small gravel. This sand should be free from all organic matter. The cuttings should be placed in the sand so that the heel containing the bud is fully covered and the sand kept moist. As soon as the cuttings are well rooted, they should be set in a permanent place or pots. In the case of most hedges they can be propagated in the place in which they are to remain.

In small nurseries it is recommended that all of the above plants which are produced from seeds be germinated in bamboo tubes. This assures good healthy plants and facilitates the transplanting of the same to their permanent place.

In case of propagation from seeds it is very necessary that the fruits from which the seeds are taken be allowed to ripen upon the tree.

Securing seeds.—As an aid to division superintendents and teachers in the establishment of school nurseries, the following information relative to the fruits common in certain provinces and to the months during which the fruit itself matures has been compiled from the latest annual reports of division superintendents. It is believed that this list will be of considerable value as an aid to division superintendents in securing seeds of desirable fruit and other trees which are not common to the province. In this connection it should be noted that all correspondence with division superintendents relative to securing seeds as noted in this article may be sent direct to the division superintendent concerned and need not be sent through the Director of Education as in the case of other official correspondence.

Atis.—Agusan (September), Antique (November), Bataan (October and November), Batangas (September and October), Bohol (December and January), Bulacan (May and June), Cagayan (May), Camarines (February), Capiz (January and February), Cavite (September and October), Cebu (September and October), Ilocos Norte (August and September), Iloilo (May and June), Laguna (July and August), Leyte (September and October), Nueva Vizcaya (February), Occidental Negros (June and July), Palawan (August), Pampanga (May), Pangasinan (August and September), Sorsogon (October), Tarlac (October and November), Tayabas (October to December), Union (July), Zambales (August).

Anona.—Antique (November), Bataan (October and November), Batangas (November), Bohol (April and May), Bulacan (May and June), Cagayan (May), Camarines (February), Cavite (November and December), Cebu (September and October), Ilocos Norte (February and March), Iloilo (September), Laguna (March and April), Nueva Vizcaya (April), Occidental Negros (May and June), Palawan (August), Pampanga (May), Pangasinan (March), Sorsogon (May), Tarlac (July and August), Tayabas (May and June), Union (March), Zambales (December).

Acacia.—Agusan (May), Bataan (September and October), Batangas (April), Bohol (May), Cagayan (July), Cebu (October to April), Ilocos Norte (April and May), Ilocos Sur (February and March), Laguna (March and April), Leyte (March and April), Nueva Vizcaya (April), Occidental Negros (April and May), Palawan (April), Pangasinan (April and May).

Balimbing.—Agusan (May and June), Antique (November and December), Bataan (March, April, and May), Batangas (December), Bulacan (April and May), Cagayan (May), Camarines (March), Cavite (April and May), Iloilo (April and May), Laguna (January and February), Leyte (October and November), Occidental Negros (November), Palawan (May), Pampanga (January), Pangasinan (April and May), Sorsogon (February), Zambales (August).

Banana.—Ilocos Norte (August).

Bago.—Bohol (September and October), Laguna (October), Nueva Vizcaya (January).

Bread fruit.—Agusan (May), Antique (April), Bataan (January and February), Batangas (March), Bohol (April and May), Bulacan (May and June), Cagayan (June), Camarines (July and August), Capiz (November and December), Cavite (June and July), Cebu (August and September), Ilocos Norte (June and July), Iloilo (February), Laguna (October and November), Leyte (October and November), Mountain (December), Occidental Negros (February and March), Palawan (May), Pampanga (January), Pangasinan (April and May), Sorsogon (January), Tarlac (September), Tayabas (October to December), Union (October to December), Zambales (May and June).

Casoy.—Antique (March), Bataan (April and May), Batangas (May), Bohol (April), Camarines (May), Cavite (March and April), Iloilo (May and June), Occidental Negros (March), Palawan (April), Pangasinan (April and May), Union (February and March), Zambales (March).

Candle nut.—Cavite (April), Occidental Negros (November), Palawan (November), Zambales (February).

Chico.—Agusan (June), Bataan (October to May), Batangas (December), Bohol (May and June), Bulacan (August and September), Cagayan (May), Cavite (June to November), Cebu (September to November), Ilocos Norte (November), Laguna (January and February), Nueva Vizcaya (November and December), Occidental Negros (April and May), Palawan (June), Pangasinan (May and June), Sorsogon (October), Tayabas (February), Zambales (February).

Ciruela.—Agusan (May and June), Antique (May), Bataan (May and June), Bohol (January and February), Bulacan (May and June), Cagayan (June), Cavite (April and May), Cebu (May and June), Iloilo (April and May), Laguna (April and May), Nueva Vizcaya (April), Palawan (April), Pampanga (November and December), Pangasinan (April and May), Sorsogon (November), Tarlac (May and June), Tayabas (March), Union (May).

Coffee.—Nueva Vizcaya (February).

Camachile.—Pangasinan (May), Zambales (June).

Coconut.—Pangasinan (February and March).

Fire tree.—Nueva Vizcaya (December).

Guava.—Cebu (May and June), Zambales (May).

Guayabano.—Nueva Vizcaya (May), Union (May and June).

Jack fruit.—Agusan (all year), Antique (March and April), Batangas (December), Bohol (March and April), Bulacan (all year), Cagayan (July), Camarines (May and June), Capiz (January and February), Cavite (September and October), Ilocos Norte (April and May), Ilocos Sur (February and March), Iloilo (November and December), Laguna (September to March), Leyte (September and October), Mindoro (December), Nueva Vizcaya (November), Occidental Negros (May and June), Palawan (November to January), Pampanga (May), Sorsogon (January), Tarlac (May and June), Tayabas (March and April), Union (January and February), Zambales (October).

Kapok.—Agusan (May and June), Antique (May and June), Batangas (November), Bohol (February and March), Cagayan (June), Capiz (May and June), Cebu (July), Ilocos Norte (April and May), Ilocos Sur (April and May), Leyte (September and October), Nueva Vizcaya (June), Occidental Negros (March to May), Palawan (April), Pangasinan (May), Sorsogon (April), Tayabas (June), Zambales (March to April).

Lanzones.—Agusan (October and November), Batangas (October and November), Bohol (October and November), Bulacan (May and June), Cavite (October and November), Cebu (May to August), Ilocos Norte (December), Laguna (October and November), Leyte (October and November), Palawan (November), Sorsogon (October).

Lemon.—Agusan (October and November), Antique (October to January), Bataan (November and December), Batangas (November and December), Bohol (December), Bulacan (December and January), Cagayan (September), Camarines (October and November), Cavite (June to November), Ilocos Norte (December and January), Ilocos Sur (December and January), Iloilo (November and December), Laguna (September and October), Leyte (August and September), Mountain (August), Occidental Negros (October), Palawan (November), Pampanga (October to December), Pangasinan (October to December), Sorsogon (January), Tarlac (September), Tayabas (October to December), Union (November), Zambales (August).

Lime.—Agusan (April), Bataan (September to March), Batangas (December and January), Bohol (March), Cavite (May and June), Ilocos Norte (November and December), Iloilo (November and December), Laguna (September and October), Nueva Vizcaya (April), Palawan (November), Pampanga (October to December), Sorsogon (October and November), Tayabas (October to December), Zambales (January and February).

Lombay.—Agusan (May and June), Antique (April and May), Bataan (April and May), Batangas (April), Bohol (May and June), Bulacan (April and May), Cagayan (May), Camarines (June), Capiz (April), Cavite (April and May), Cebu (June and July), Ilocos Norte (March and April), Iloilo (May and June), Laguna (November and December), Palawan (April), Pampanga (January), Pangasinan (April and May), Tarlac (April and May), Tayabas (May), Union (May), Zambales (April and May).

Lobac.—Cagayan (August).

Mabolo.—Bataan (June and July), Batangas (December), Bulacan (February and March), Iloilo (July and August), Laguna (May and June), Leyte (October and November), Nueva Vizcaya (October), Cagayan (June), Camarines (June), Capiz (July and August), Cavite (August), Ilocos Norte (June and July), Occidental Negros (August), Pampanga (December), Pangasinan (March), Sorsogon (May), Tarlac (January and February), Tayabas (November), Union (August and September), Zambales (July).

Macopa.—Agusan (May and June), Bataan (February, March, and April), Batangas (April), Bohol (November), Bulacan (April and May), Iloilo (May and June), Laguna (December and January), Camarines (March), Cavite (April and May), Ilocos Norte (June and July), Occidental Negros (October), Pampanga (February and March), Pangasinan (April and May), Sorsogon (May), Tarlac (March), Union (April and May), Zambales (March).

Molave.—Bohol (April), Leyte (November and December), Cebu (September), Ilocos Norte (July and August), Palawan (September).

Mango.—Batangas (May and June), Bulacan (May and June), Iloilo (May), Cagayan (July), Union (April and May), Zambales (May).

Narra.—Bohol (May), Cebu (September), Ilocos Norte (May and June), Palawan (September).

Orange.—Agusan (June and October), Batangas (November to June), Bohol (November to March), Cagayan (June), Camarines (October and November), Capiz (November and December), Cavite (June to November), Cebu (April), Ilocos Norte (December and January), Ilocos Sur (November and December), Iloilo (December and January), Laguna (November), Leyte (August and September), Mountain (August), Nueva Vizcaya (June), Palawan (November), Occidental Negros (October), Pampanga (November to January), Pangasinan (January and February), Sorsogon (January), Tarlac (October and November), Tayabas (October to December), Union (November and December), Zambales (September and October).

Papaya.—Agusan (April), Antique (all year), Bataan (all year), Batangas (all year), Bohol (all year), Bulacan (all year), Cagayan (July), Camarines (all year), Cavite (all year), Cebu (all year), Ilocos Norte (all year), Ilocos Sur (all year), Iloilo (all year), Laguna (all year), Mountain (all year), Nueva Vizcaya (all year), Occidental Negros (all year), Palawan (all year), Pampanga (all year), Pangasinan (December and January), Sorsogon (all year), Tarlac (February and March), Tayabas (all year), Union (all year), Zambales (September and October).

Pomelo.—Bataan (January and February), Batangas (November), Bohol (November), Cebu (February and March), Ilocos Norte (April to September), Iloilo (October and November), Laguna (September and October), Mountain (August), Palawan (December), Tarlac (August), Tayabas (August).

Pili nut.—Agusan (May and June), Bohol (March), Camarines (March), Cavite (March and April), Laguna (October), Sorsogon (March), Tayabas (August to December).

Palomaria.—Ilocos Norte (January and February), Palawan (May), Pangasinan (May), Zambales (May).

Santol.—Nueva Vizcaya (August), Union (July).

Tamarind.—Agusan (February), Antique (November), Bataan (May and June), Batangas (December), Bulacan (March), Cagayan (March), Camarines (February), Cavite (December and January), Cebu (May), Ilocos Norte (January and February), Ilocos Sur (January and February), Iloilo (December and January), Laguna (February and March), Nueva Vizcaya (January), Occidental Negros (January and February), Palawan (March), Pampanga (December), Pangasinan (June and July), Sorsogon (August), Tarlac (December to April), Tayabas (March), Zambales (January and February).

The division superintendents of the following divisions have reported that they will be able to supply the seeds of the fruits or trees given if the request is received during the month indicated after the name of the fruit or tree.

Batangas.—Orange, lime, papaya.

Bohol.—Papaya, bread fruit, lanzones, tamarind, orange, jack fruit, macopa, balimbing.

Cavite.—Mango, chico, lomboy, atis, bread fruit, jack fruit, papaya, tamarind, orange, anona, mabolo, casoy, macopa, balimbing, lanzones, candle nut.

Cebu.—Atis, bread fruit, guava.

Ilocos Norte.—Papaya, orange, lemon, lomboy, atis, anona, jack fruit, mabolo, tamarind.

Iloilo.—Papaya, bread fruit, mango.

Laguna.—Lanzones.

Leyte.—Atis, jack fruit, papaya, lanzones.

Mountain.—Papaya, lemon, orange, pomelo.

Nueva Vizcaya.—Coffee, jack fruit, anona, santol, atis, goyabano, lime, orange.

Pangasinan.—Tamarind, anona, kapok, papaya, orange, lemon, lomboy, ciruela, camachile, chico, casoy, jack fruit, coconut.

Sorsogon.—Pili nut.

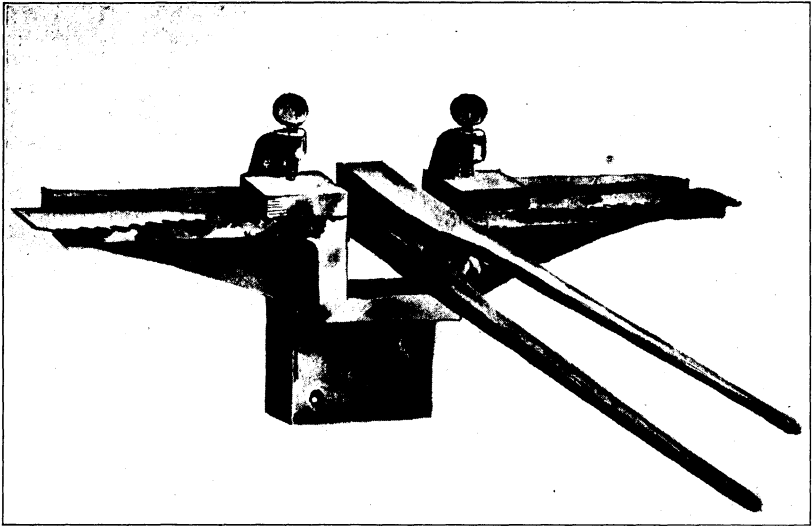
Union.—Mango, santol, lomboy, orange, atis, anona, papaya, lemon, guayabano, jack fruit, mabolo, tamarind.

Zambales.—Mango, papaya, lomboy, guava, tamarind, camachile.

HOW TO BRAZE SMALL BAND SAWS.

Square the ends, then on opposite sides bevel each end back about five-eighths of an inch. The bevel must be perfectly true and thin enough to leave a wire edge on the ends.

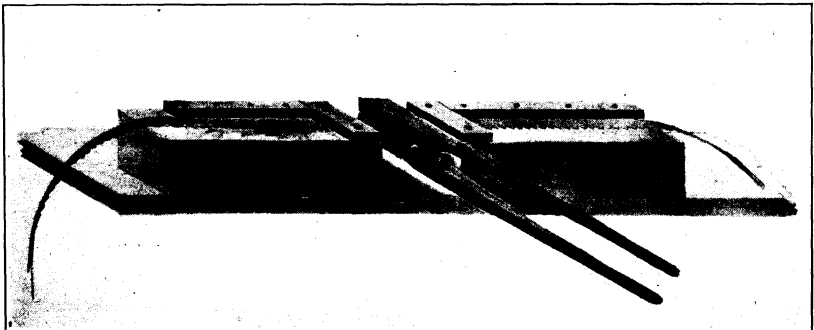
Fasten two blocks, 4 by 4 by 8 inches, about 3 inches apart, to the edge of a bench, and clamp the saw to the blocks so that the ends will lap properly and the back will be perfectly straight. If the saw is not straight when it is brazed it will soon break again. Free the sides to be joined from grease and cover with borax. Then place a piece of silver solder, the size of the lap, between the joint.



Brazing clamp and tongs.

A pair of heavy tongs with jaws, 1 by 1 by 4 inches, will work well on saws up to three-fourths inch wide. The inside of these jaws should be true, so as to clamp evenly over the joint. Heat the tongs to a bright red, clean the inside of the jaws, and clamp the joint firmly and evenly. Another pair of tongs which will clamp down on the ends of the hot jaws will be useful. Leave the tongs over the joint until they get black, then remove them and smooth the joint with a fine file, making it the same width and thickness as the rest of the saw.

The above illustration shows the ordinary brazing clamp and tongs. Where these are not available, a convenient method with the blocks may be used as illustrated below.—Alma Beck.



A substitute for brazing clamp and tongs.

EDITORIAL.

In the February number of THE PHILIPPINE CRAFTSMAN reference was made to Mr. Meyer Bloomfield's "Study of Certain Social, Educational, and Industrial Problems in Porto Rico."

Schoolroom
Decoration. Mention was made of his criticism to the effect that many of the schoolrooms lacked appropriate decoration, that school walls should show what might be inexpensively done with barren homes, and that health suggestions, effectively presented, would serve a better purpose than the usual class of mottoes found adorning school walls. It was further stated that such a criticism would doubtless be valid in respect to many of our schools, although the stimulus given by ex-Governor-General Forbes in presenting a large number of pictures to many of the schools had greatly improved classroom decorations.

This article was written before Dr. Paul Monroe of Columbia University began his "Survey of the Philippine Public Schools" based upon a brief inspection of our schools. In the latter's report under the head of "Aesthetic Training," he states that improvement could be made in the beautification of our schoolrooms, and that where this has been attempted by the use of pictures, not as much attention has been given to the selection as should be the case. Doctor Monroe considers that a few pictures, well selected and well placed, make a very much better effect than a very considerable number, when the latter have little or no relation to each other or to art in general. He states that so many firms furnish pictures of this kind that little effort or expense would be entailed in properly decorating a room, but that possibly the tropical climate made it inadvisable to have any decoration of this kind.

To many teachers the question of schoolroom decoration seems to be one that is very wide of the mark. To a supervising teacher who is straining every resource in order to protect his barrio children from the rain and sun by means of nipa roofs and sawali walls, the question of suitable interior decorations seems to be one that need not trouble him for some time. For him the difficulty of securing decorations and the still greater difficulty of keeping them presentable in a schoolroom whose walls admit generous portions of rain and wind, postpone the necessity of the serious consideration of this topic to some future date.

A steady increase, however, of permanent buildings surrounded by suitable grounds makes it imperative that in many cases more attention be paid to the aesthetic training of the child through means of interior decorations.

The teacher who is delighted to have benches enough of any kind at which his pupils may study will not consider this matter as a very pressing one. For him the question of the quality and arrangement of the furniture of the room is not a vital one, but the matter of securing a sufficient quantity of seats is, in many cases, a burning question. A schoolroom should, however, be beautified and made as healthful as possible through artistic and sanitary means.

In the decoration of the room, the teacher and pupils are offered splendid opportunities for the correlation of school work with practical operations. Pictures well adapted for schoolroom decoration may be secured at low prices from merchants in Manila or may be ordered direct from the large dealers in the United States. Valuable suggestions as to appropriate pictures and the firms from which they may be secured will be found in the Bureau of Education Bulletin No. 47, "Good Manners and Right Conduct."

The care of a few potted plants involves no great difficulty and is worth much more to the pupils from an educational standpoint than is the careful study of a number of pages of text taken from some work on nature study. The making of picture frames, well designed desks and other school furniture is a task which will bring forth the best efforts of the trade pupils, inasmuch as they themselves enjoy the privileges of using the same. The preparation of suitable borders which may be changed from time to time furnishes an incentive to the drawing pupils to do their best work. The following of these suggestions will tend to correlate school work more closely with the raising of standards of home life than is possible in any other way.

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A suggestion has been frequently received from the field to the effect that THE PHILIPPINE CRAFTSMAN would be of more interest to its readers were each of the principal divisions of industrial work given approximately equal space in each issue. This proposition was carefully considered by the editorial staff upon the inception of the magazine and it was unanimously decided, for the best interests of all concerned, not to adopt such a make-up for the magazine. So far as the interest of the general reader is con-

**Make-up of The
Philippine
Craftsman.**

cerned, the treating of a larger number of topics in each number would probably cause each individual issue to contain something of special interest to each class of industrial workers. Moreover, there would be no additional labor or expense involved in carrying out such an arrangement; for example, it would have been just as convenient to have divided the "Bamboo and Rattan Course" appearing in the first number, the article on "Historic Ornament" in the third number, and the "Course in Pliable Fibers" in the present issue into three parts and to have run one-third of the article at a time, thus having three numbers containing material relating to three different topics. Such a distribution of material would, however, require a teacher in bamboo and rattan work to have on hand three numbers of *THE PHILIPPINE CRAFTSMAN* instead of one whenever he desired to use the material published on his special line of work. The same would be just as true in respect to the other articles. The editorial staff is confident that a full treatment of a single subject in one issue is far preferable to its division into a number of issues. Utility must be considered more than interest, and the contents of the magazine must be judged by whole volumes rather than by single issues.

In respect to the number of pages of each issue, an average size of 70 pages of reading matter has been decided upon. When the leading article is unusually long, 8 extra pages may be added, as is the case with the present number. When the regular articles are shorter than usual, the number of pages may drop to 62, as in the second issue. Notwithstanding such variations as the length of the leading article may seem to require, the subscriber may depend definitely upon getting an average number of 70 pages of reading matter in each issue.

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The industrial activities of the Bureau of Education may be broadly classified as follows:

The training of pupils in industrial work, hand in hand with their academic training, is designed to produce a class of semiskilled workers able and ready to take up as life occupations the industrial lines which they have been studying. In addition to this system of instruction for the youth of the country, more specific vocational training is afforded to adults along certain lines. In lace and embroidery the School of Household Industries aims so thoroughly to train workers that they may not only be able to pro-

The Graduates of
the School of
Household
Industries.

duce work of commercial value immediately, but may also be in a position to train other workers and to handle the necessary commercial transactions incident to the proper conduct of a business enterprise.

The first two classes of the School of Household Industries have completed the course of instruction and the graduates have returned to their home towns to undertake the organization of working centers for the production of lace and embroidery, as contemplated by Act No. 2110 of the Philippine Legislature. The establishment of this school was part of a comprehensive plan of the Philippine Government for the promotion of the home industries. Government aid in the promotion of the home industries is recognized as indispensable in many European countries and this policy, modified to meet the conditions, has been adopted in the Philippines. In the United States, Government aid is limited to the training of industrial workers in public industrial schools for industries that exist in the various communities. In the Philippines, it must not only give instruction to the workers, but it must make provision for every step in a long chain of processes in establishing and carrying on the industry. In so far as the home industries are concerned, Government aid must be employed (a) to train leaders in the industries, (b) to assist in the organization of working centers, and (c) to provide a market for the product until such time as commercial firms enter the field to take over the business. The strength of this chain of processes will be measured by its weakest link; if one link is weak the whole plan will be defeated. The first step—the training of the leaders—is adequately taken care of by the School of Household Industries; the third step—the market—is provided by the Sales Agency, which is prepared to purchase, and is now purchasing, marketable articles produced by the graduates of the school or by their workers; further, the Sales Agency is furnishing each graduate with an order to be filled as soon as she returns to her home town and establishes her working center. Manifestly the weak link in the chain lies in the field organization.

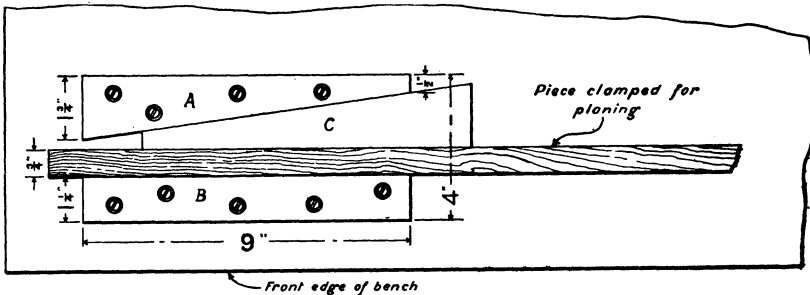
The plan of organization in the field presupposes (a) the return of the graduate to her home town or such other municipality as may be agreed upon by herself and the Director of Education, and the training by her of a group of workers, (b) the active coöperation of the representatives of the Bureau of Education in effecting the organization of the local centers and their assistance in the inspection and classification of the product, (c) an appropriation by the provincial board of an amount

to create a working capital for the purchase of articles, and (d) the purchase by the provincial treasurer of articles made by graduates of the School of Household Industries and their workers, and their transmission to the Sales Agency. Further, the industrial instruction in the public primary and intermediate schools is being correlated with the work of the centers now in process of formation so that when pupils leave school they may enter the industry in which they have received training; and wherever it is feasible it is proposed to organize classes for adults in order to quickly train a body of efficient workers for the centers. In order to effectively carry out this plan the graduates of the school will need the encouragement and assistance of representatives of the Bureau of Education, of provincial officials, and of representatives of the Sales Agency wherever they are in personal touch with the field.

In no case has the Director of Education granted authority for the employment of the graduates as teachers. As contemplated by Act No. 2110 they were trained at Government expense for leadership in the establishment of the home industries and they will receive Government aid and encouragement, wherever it is needed, until the plan has been carried to fruition.

A BENCH CLAMP.

The accompanying drawing shows a clamp for holding light work. The pieces *A* and *B* should be from $\frac{3}{4}$ to 1 inch thick, or even thicker for heavy work, and should be fastened to the bench with screws. After placing the piece to be planed, clamp it by pushing the piece *C* into position as shown. This clamp has been used by American carpenters for a number of years and has been found to be a serviceable substitute for the bench stop.



A bench clamp.

INDUSTRIAL NOTES.

ONE OF THE USES OF KAPOK.

Life belts, life buoys, deck-chair cushions, and other life-saving appliances used by the German navy and passenger lines are stuffed with kapok. It is claimed that it is not necessary for the covers to be water-proof, as the fiber alone has buoyancy enough to support the required weight in water.

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REGISTRATION OF PATENTS.

Act No. 2235 of the Philippine Legislature enacted under date of February 10, 1913, provides for the registration of patents in the Philippines. Patents which have been properly issued or may hereafter be issued in the United States Patent Office shall receive in the Philippine Islands the protection afforded in the United States. Anyone infringing such rights shall be liable to the punishment prescribed by the laws of the United States. In order to secure the protection afforded by this law, it is necessary for the owner of the patent to file a duly certified copy of the same with the proper office in the Philippines. Act No. 2235 also provides that all patents and trade-marks secured in the Philippine Islands under the Spanish laws shall be respected the same as if such laws were still in full force and effect.

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TO PRESERVE PAINT BRUSHES.

Make a mixture of turpentine substitute and raw linseed oil in a tin pail. Put a small hole in the handle of the brush and another in the cover of the pail. Run a wire through the hole in the cover of the pail and let the brushes hang in the

mixture when not in use. Keep the pail covered.

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TO MARK YOUR TOOLS WITH ACID.

In marking iron tools, the following method will be found to give good results: Melt a little beeswax or tallow, and pour it on the iron at the place to be marked. After the wax or tallow cools, take an awl or sharp piece of steel and do your writing in the wax. Pour a little nitric acid on the wax where you have done your writing and allow to remain a few moments, then wipe off the wax and the writing remains indelibly marked in the iron.

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CORN CONTESTS.

A recent article in the Christian Science Monitor of Boston stated that approximately 2,000 boys and girls entered this year's corn-growing contest in Ohio. This number of entries seems to indicate a great deal of enthusiasm until compared with the 1,134 entries for the division of Agusan in our corn-growing contest. Based upon population, the State of Ohio must have 200,000 entries in order to have the same pro rata as that of Agusan. The magnitude of some of our activities in the Philippines is frequently lost sight of until attention is directed to the extent of similar undertakings in other countries.

The article in question is here quoted in full.

"In Ohio 2,000 girls and boys are ready for this year's corn-raising contest, and more particularly for the trip of four days to the capital of the United States, which is the

reward to all who have the good fortune to get a place in the successful class. The success of these contests is said to have exceeded the most sanguine expectations and the attention of the State has been called to them in such a way that there is no scarcity of contributors to the prize fund.

"The average yield of corn per acre in Ohio is 35 bushels. In the contest of last year a boy from one of the counties beat that yield 4 to 1, and by so doing he aroused an interest in proper cultivation never before known. Nor was the contest confined to boys. A school girl from another county raised 100 bushels per acre and had a happy time looking over Washington as her reward. Men who hitherto had considered themselves farmers of the first class were compelled to look on at this contest which proved that their children and their neighbors' children could better their own best efforts with ease.

"One of the results has been that when announcement came that the contest for this year would be enlarged there were a number of new entries, aggregating 2,000 boys and girls, and voluntary subscriptions, from prominent men and business organizations, sufficient to furnish the usual quota of trips. County organizations were also formed to exploit the movement and everything has been done to encourage the project.

"The economic question involved is obvious. The State of Ohio had 3,000,000 acres planted in corn last year, giving an average yield of 35 bushels. Suppose that by an improvement in cultivation and planting these 3,000,000 acres can be made to increase the yield to 50 bushels. The increase of 15 bushels per acre, if carried over the 3,000,000 acres, will give to the State an additional 45,000,000 bushels of corn, a very valuable addition to the farmers'

assets and the general wealth of the State. It is believed in Ohio that this can be done, and if it is possible in Ohio why not elsewhere? Aside from the increased product it means much to the children. It teaches them industry, gives them good training in economy, and spurs them to look out for waste."

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CONSOLIDACIÓN NACIONAL ON THE CORN CAMPAIGN.

With unusual activity the Government is assisting in carrying on, through the means of the Bureau of Education, the corn campaign. This campaign has for its object the instruction of the people in the most practical methods to be followed in the production of this excellent cereal and the teaching of the many varieties of its use in the kitchen.

The idea was born in days of decided anxiety for the country, when great hunger was felt in all parts on account of the prolonged drought, when our rice fields were in miserable condition on account of the terrible heat, and when hunger showed its "sinister aspect in the Orient."

The work done since that time has been crowned with success, due in part to the by no means inappreciable coöperation of the local authorities and to the frankly favorable acceptance of the public. The results have made well known the best methods of the cultivation of corn and its preparation for consumption and, in an indirect manner, have spread a great deal of useful practical knowledge of every phase of agricultural work.

Even apart from the circumstances which gave rise to the project, the work in itself has for us a transcendental importance in so far as it proposes a useful innovation in the general method of living—planning to introduce a new basic food through the practical demonstration

of the excellent features of corn, the excellent nutritive power of which can be most favorably compared with that of any other grain.

But the most attractive feature of the project is the lofty purpose evident in the inauguration of the campaign, that of placing the community in condition to persevere against the inclemencies of the climate; to meet, in the best manner, the contingencies of life; and to adapt itself without great loss, to the caprices of nature.

When one considers that the agriculture of the Philippines is constantly afflicted by the disastrous action of the elements which very frequently cause the complete ruin of our crops and that the production of corn is the earliest, most expeditious, and freest of danger, no one can fail to realize the merits of the enterprise. For these reasons we believe that the Government, in undertaking this matter, is bringing to a head a true work of providence, realizing a system of national economy, and fulfilling one of the most important functions devolving upon it, that of providing for the people a subsidiary means of subsistence. Thanks to the work of the Director of Education and his teachers, by this enterprise "will be multiplied the actual production of food crops and the day of the economic independence of the Filipino people will be nearer at hand."

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NOTES FROM BUREAU OF EDUCATION,
WASHINGTON, D. C.

THE LITERATURE OF INDUSTRIAL EDUCATION.

What is considered to be the first extensive list of books and articles on industrial, trade, and vocational education yet compiled has just been issued by the United States Bureau of Education. The bibliography was prepared by Henry R. Evans, of the editorial division of the bureau, as-

sisted by members of the library staff.

Literally hundreds of books and articles have recently appeared on this all-important subject, and it is in order to furnish a guide to the material now available that the Bureau has issued its bibliography. About 800 carefully selected titles are listed, and the more important works are summarized for the busy reader who wants to see at a glance what a book contains.

Some of the topics covered are: Work and citizenship; apprenticeship; "blind-alley" employments; continuation schools; vocational legislation; coöperative courses; economic and social value of industrial training; industrial efficiency; industrial education in foreign countries; attitude of trade unions; vocational guidance.

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APPRENTICESHIP AND INDUSTRIAL TRAINING.

That apprenticeship is the main reliance of industrial training in Germany, and that it might be desirable to revive it in some form in this country, is the conclusion of Dr. Holmes Beckwith, who has prepared for the United States Bureau of Education a study of German industrial education and its lessons for the United States.

"Wasteful though the old apprenticeship was of the apprentice's time and effort, apprenticeship in its newer forms, both in Germany and the United States, has in it much of promise for the future training of industrial workers," says Doctor Beckwith. "No better way, or even as good, has yet been devised for the main training of the mass of industrial workers than in the shops where they are employed and by those who supervise their work."

Doctor Beckwith suggests that if all employers pay the cost of adequate training for any youthful

workers whom they may employ as apprentices, the burden will not be serious. He points to instances both here and abroad to prove that "firms employing bona fide apprentices today find that their apprenticeship system pays."

Revival of apprenticeship alone will not solve the problem, however. "What we should strive for," declares Doctor Beckwith, "is such broadening industrial training as will supplement the narrower range of skill and knowledge, and give the specialized worker greater resource. Specialization is probably more wide-spread in the United States than in Germany, and this constitutes an added need which we have for industrial education greater than that in Germany."

"Industrial schools, then, we must have, and in far greater numbers, to meet the needs of far more workers than at present. Otherwise we can make little claim to really popular education of the sort closest to the worker's activities."

Doctor Beckwith notes the present awakened interest in industrial education in the United States, but issues a word of caution. He fears that unless the vocational movement is carefully guided, it will lead to waste of money by States and cities and unwise choice of schools to do the work. He describes in some detail the German industrial-education system and typical schools, with a view to presenting the best of German experience as a guide to American practice.

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VOCATIONAL GUIDANCE AND VOCATIONAL TRAINING.

How the Vocational Guidance Survey of New York City voluntarily became the Vocational Education Survey, because those in charge believed that the really needful thing was to train children to be efficient rather than to find jobs for them

for which they were not trained, is told in a document just issued for free distribution by the United States Bureau of Education.

"What the children really want," says Miss Alice B. Barrows in the Bureau report, "is vocational training. The kernel of truth in this popular movement for vocational guidance is the need of vocational training for children. Vocational guidance should mean guidance for training, not guidance for jobs. Hence, under present conditions, the interests of public-school children can best be served, not by the establishment of a vocation bureau, but by the development of vocational training."

The survey was undertaken by a joint committee of the Junior League and the Public Education Association. It was organized for the purpose of studying a group of New York children leaving school to go to work, in the hope of determining what vocational guidance should mean to the public schools of the city. Like all careful investigations of recent times, this survey demonstrated that "economic pressure" accounts for only a small proportion of the children who leave school to go to work.

Investigation of the children at work showed that what they wanted more than anything else was "a job where you can learn." In most instances they were not getting it. For the most part their work meant nothing to them; they were rapidly developing a "feeling of protest against the lack of individual attention and training; against the military discipline and inexplicable tasks."

On one point the New York report is unusually explicit. "There are no jobs for children under 16 which they ought to take," it declares. Furthermore, it emphasizes the need for more information about industrial

conditions before attempting to steer boys and girls into positions. "Neither the Vocational Education Survey nor any other organization has adequate information at present about the demand for workers or the opportunities and conditions of work and training in the 20 largest industries, not to mention the legion of smaller ones." Until more exact information is at hand the vocational-guidance movement, says the report, will remain "little more than a body of good intentions without any clarified plan."

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THE INFLUENCE OF THE INDUSTRIAL TEACHER.

The industrial teacher occupies a very significant place in the formation of the destinies of the Filipino people. The far-reaching results of his influence on the industrial problems and the prosperity of these Islands cannot be overestimated.

The industrial phases of our system of instruction are of prime importance. To train boys and girls in literary accomplishments alone is to make them reluctant to do any kind of industrial work and unfitted, if necessity should ever compel them, to enter upon the daily task.

The industrial school with its varied program of local and new industries is a cradle of wealth. Its object is to develop not only manual dexterity, but industrial intelligence; its aim, to raise to a higher plane the efficiency of the native tradesman and wageworker. To increase his effectiveness, he must be taught the dignity of labor and his place as an economic unit in the industrial and social world.

What is needed above all else is industrial intelligence. The "mañana" and "después" idea must be relegated to the past. "Do it now" must be branded deep into the awakening faculties of every school child, who must be taught to see

beyond and ahead of the task that occupies his hand for the time being.

He must know the processes of what he is doing from beginning to end, the nature of the materials used, and the estimated cost. He must appreciate fully the obligation of a business contract.

One may say this is fine theory, for who will take up this great work? Will it be the business man? No; competition is too great. He wants the experienced man. The academic teacher? No; the subject is not in his line. To accomplish this the industrial teacher must be called upon. A man is needed who combines more qualities than those which his profession as teacher, carpenter, or draftsman call for. He must be a business man and industrial promoter. The pupils and people must see in the management of his school business methods that will arouse interest and show progress in the doing of things worthwhile—the introduction of industries and their permanent establishment so as to make their outputs marketable in every port, and in the training of tradesmen not only in the proper handling of their tools but also in the commercial knowledge of the industry in which they are engaged. Rare indeed is the man in whom these qualities are found in their fullness.

To-day the apprentice must be taught in the industrial school. Time is too short and competition is too great for the manufacturer to have learners in his business. This problem is solely in the hands of the industrial teacher. He is the one who handles in concrete form the problems of Filipino every day life. It is in his power to develop, form, and stamp in the young tradesman or business man to be a new conception—that good work and straight methods alone count in the commercial world of to-day. (Jos. H. Loughran.)

GOOD DESIGNS IN CURRENT NEEDLE-CRAFT MAGAZINES.

Illustrations appearing in the current needle-craft magazines which show the best designs and seem best suited to the needs of this line of industrial work are noted as follows:

Modern Priscilla, April, 1913: Centerpiece No. 13-4-48, page 14.

Modern Priscilla, July, 1913: Coin purses Nos. 13-7-37 and 13-7-39, page 12, are very nice and also the collar and cuff set, No. 13-7-48, page 17. Though it is suggested that the collar be worked in color, it will be effective in all white embroidery.

Modern Priscilla, August, 1913: The hand bags Nos. 13-8-31 and 13-8-29, page 12; crochet bag No. 13-8-37, page 14, and centerpiece No. 13-8-49, page 17.

Modern Priscilla, September, 1913: Towel No. 13-9-17, page 7, and the shirtwaist which appears on page 12, particularly the latter, are very acceptable. The tea napkins on page 18 are good, but Nos. 13-9-66 and 13-9-67 have not so much merit as the others. The luncheon set on page 24 shows a good arrangement of eyelet work.

Woman's Home Companion for June, 1913: Collar No. 1084, collar and revers No. 1087, and bag No. 1086 on page 60, are nice, especially the first. The lace frill might well be omitted in collar No. 1084 and the other two designs, though planned for color, would be effective in all white.

In the Home Needlework Magazine for June and July, the following designs are most acceptable:

Crochet bag, No. 1332, page 151; crochet finger purse, No. 1333, page 152; Irish crochet collar, No. 1338, page 153; crochet cover, No. 13331, page 171; towel, No. 13340, page 173; sailor collar, No. 13351, page 181. In the last, the ball pendants are superfluous.

Home Needlework Magazine for

August and September, 1913, offers the following:

Collar and cuff set, No. 1345, page 218; collars No. 1346, page 218, and No. 1347, page 219; Irish crochet collar, No. 13427, page 230; towels Nos. 13433 and 13434, page 233; baby cap and nightingale, Nos. 13438 and 13439, page 236.

Although the collar and cuff set No. 1345 is planned for the use of color, it will be effective in all white if worked on thin material.

In the Irish crochet collar, No. 13427, the fern-leaf edge does not add to the beauty of the collar. It should be left off, leaving the crochet roses to finish the edge, or a very light edge in which the units are connected instead of detached as they appear here might be substituted.

In the Lace and Embroidery Review for January, 1913, certain of the collars shown in lace and machine embroidery are adaptable to all embroidery in handwork. In the collar which is lowest in the illustration opposite page 50, the effect of the lace edge can be secured by using satin and shadow stitches for the round looplike units, the edge scalloped and the space between filled with calado. Armenian lace could be substituted for the picot edge or the edge of the collar left plain. This should make a beautiful collar and the same design also offers suggestions for the placing of units to good effect in Irish crochet.

The collar shown in the upper left-hand corner of the illustration on the fifth page following page 52 could be put into all embroidery by substituting a fine scallop and calado for the lace edge shown or a baby Irish or fine pillow lace could be used instead of that illustrated. The embroidery should be done upon fine linen or batiste.

The Lace and Embroidery Review, February, 1913: Some embroidery collars which are new in shape, ac-

ceptable in design, and which should prove comparatively simple in fabrication are shown on pages 49 and 73. The one on the lower right of the latter page is particularly nice.

This number also shows a good, though somewhat elaborate, design for filet lace and directions for making filet which should be of assistance to those who have taken up this very beautiful style of lacework.

Other good and more simple designs for filet are shown on the third page following page 62 in the March issue of *The Lace and Embroidery Review*. Any filet net design may be worked in filet crochet.

The Lace and Embroidery Review, May, 1913: A pillow-lace collar of acceptable design is shown in the upper left of the plate opposite page 25.

The Lace and Embroidery Review, July, 1913: Another pillow-lace collar which is simple and very nice appears in the upper left of the plate opposite page 35 and an acceptable design for Irish lace in the center left of the plate opposite page 25.

In the *Lace Embroidery Review* for July, 1913, the embroidery collars in the illustration opposite page

33 are good. Armenian, baby Irish, or fine pillow lace would be suitable substitutes for the lace edges shown. The collar at the top of the plate is evidently planned for the employment of color but would be effective in all white, using the outline stitch with shadow and Kensington stitch for filling in the border along the outer edge.

The pillow-lace collars shown opposite page 48; the insertion figure 2, page 62; and the edge figure 4, page 63, are all good.

The designs shown in Plauen lace offer suggestions for placing units when designing for Irish crochet. For such suggestions see the collar on page 50 and the four small collars in the illustration opposite page 55. In the one shown on page 50, the four units placed on the extreme corners are superfluous and should be omitted. In following suggestions for adapting a design in one kind of lace to that of another kind due consideration should be given to the relative weight of the units so that the balance among units of heavy, light, and medium values shall not be destroyed. (Susan C. Johnson.)

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Volume VI. 1913. (Supply limited.)

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- Samuel Johnson, Macaulay; Self-Reliance, Emerson; Gettysburg Address, Lincoln. 1911. Reprint, 1913.
- Supplementary Problems for Trade Schools and Trades Classes in the Philippine Public Schools. 1913.
- Housekeeping—A Textbook for Girls in the Public Schools of the Philippine Islands. (In course of preparation.)
- Economic Conditions in the Philippines. 1913.

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- Second and Third Annual Reports on Private Schools and Colleges of the Philippine Islands. 1911 and 1912. (Supply exhausted.)
- A Statement of Organization, Aims and Conditions of Service in the Bureau of Education. 1911. (Several editions printed at Manila and Washington.) (Supply limited.)
- A Talk on Health Conditions in the Philippines. Dr. Victor G. Heiser, Director of Health. 1912.

PHILIPPINE CRAFTSMAN RE-PRINTS:

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